

MEMORY

IMPROVEMENT BOOK

-The Mnemonics

Mind and Memory Improvement
for Adults



ANDREW

KITE

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Andrew Kite

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Introduction

There are moments when I get up from the sofa, wander into the bedroom, and stare at the bed for a minute, trying to remember why I went in there in the first place. My mind is a blank sheet; it doesn't matter what I try—until I have sat back in my chair, I just won't remember why I got up. This happens when I'm in the middle of conversations and I can't remember what I was going to say next. Or, I walk out of my office, only to go straight back in because I simply cannot remember the reason I left my chair in the first place.

The brain is amazing. It is capable of storing huge amounts of information, whether the details are important or not. This organ is capable of solving incredibly complex problems. Consider string theory; physicists have been able to come up with and prove astounding theories that are anything but simple. If you aren't a scientist, your brain is just as capable of computing information. Solving mathematical equations, assessing situations, creating complicated business plans, or philosophizing are all examples of the power of the brain.

While we may consider our brains to be supercomputers and expect that they should be able to store and recall information without a glitch, there are a number of reasons why our memory sometimes lets us down.

The Problem

As we age, we tend to realize that our memory isn't what it used to be. This can be extremely frustrating because memory (or lack thereof) plays a huge role in our everyday lives.

There are seven common and normal memory problems that become more prominent the older we get. These are known as the Seven Sins of Memory (Schacter, 2007).

They are:

- Transience
- Absentmindedness

- Blocking
- Misattribution
- Suggestibility
- Bias
- Persistence

It's important to note that although age is a factor in these memory problems, the very same can occur in younger people. Now that we are aware of the Seven Sins of Memory, let's have a brief look at what each of them means and how they affect our everyday life.

Transience

Forgetting the details of events or facts that aren't relevant happens over time. This is what transience is. Memories that are recalled frequently are more likely to be remembered while those that are infrequently called upon may fall by the wayside. Although transience can be frustrating when you are trying to remember the name of the child you grew up next door to, scientists consider this type of "memory loss" to be beneficial, as it makes space in the brain for memories that are more useful to us.

Absentmindedness

Simply put, this is when you aren't paying attention to what you are doing. An example is putting your car keys in the refrigerator with the milk when you get home from the store. Your body continues to act, but your brain doesn't convert these actions into memory.

This explains why you have no recollection of placing the car keys in the refrigerator. It's as though your body is continuing, but your mind is absent.

Blocking

Have you ever been in the middle of something and you suddenly couldn't remember how to do it? Maybe you have been in the middle of a conversation and wanted to say something specific, but it just doesn't come out. You *know* that you know the answer, but you just can't recall it. Perhaps

a few minutes or even hours later you remember the answer.

That's what blocking is. The memory is there, but for whatever reason, your brain just can't access it at the time.

Suggestibility

The power of suggestion can lead to what is probably the best trick of the brain. When you think back to your childhood, you may recall your pet dog as being brown in color. However, your sibling says the dog was black. After a period of time, your brain will remember the dog being black. Your memory is altered by consistent suggestion, and over time, you will recall this memory incorrectly every time it comes up again.

Bias

The way memories are created, stored, and recalled can be affected by how we're feeling at the very moment. Beliefs, emotions, situations, and external influences that are present in the moment of memory creation or recollection can alter the way our brains see the memory.

Misattribution

Many of you may know this memory sin by its common name, false memory. False memory is a confusing phenomenon because in most cases the memory is not false at all, but the *context* of the memory is remembered incorrectly.

Misattribution is probably the most well-known of the memory sins. It has garnered much more attention than the others due to its potentially damaging effect in courtrooms.

As an example, an eyewitness may be extremely confident in pointing out the man they believe to be an armed robber they saw committing a crime. In actual fact, the man they are pointing out may be the cashier at the store in which the robbery occurred. The eyewitness's memory is not incorrect—they did indeed see the man at the time of the robbery. The *context* of their recollection is where the problem lies, and as such, they have attributed the incorrect action to the face they recall.

Persistence

Persistence can be considered, in a way, to be the opposite of most memory problems. Instead of forgetting, the brain attaches to a particular traumatic memory and plays it on a loop. PTSD is the most well-known example of persistent memory. The reason this is seen as a “memory sin” is that constant replaying of traumatic memories keeps one in a consistent loop of negative emotions that can have extreme mental and physical effects.

Aside from the Seven Sins of Memory, there are outside influences that also affect recollection.

These factors are:

- Stress and anxiety
- Sleep deprivation
- Decreased sleep quality
- Thyroid malfunction
- A vitamin B12 deficiency
- Depression
- Alcohol abuse
- Medication

Stress and Anxiety

Modern life is stressful. We constantly seem to be rushing from one deadline to another or from one place to another. All this action increases the levels of adrenaline, norepinephrine, and cortisol in our bodies. This reaction served us well in the distant past when we came face-to-face with danger. But in a world where our brains are saturated with information, the feeling of being overwhelmed is often misinterpreted by our ancient survival instinct as being a threat. So, this reaction becomes harmful, as the levels of stress hormones remain elevated all the time.

Our brains carry our thoughts from one section of the brain to another via neurotransmitters, which can be thought of as train cars between destinations in the brain. If we are in a constant state of anxiety, our “train cars” spread stress hormones around the brain, which negatively affects our brain cells,

and they literally begin to die off.

Our brains need glucose in order to function. Glucose is the brain's power source. When you have high levels of stress hormones running through your brain, it deprives the brain of fuel and wreaks havoc on your neurons. This makes it difficult to concentrate, recall memory, make decisions, or even to store memory.

Sleep Deprivation

When we don't get enough sleep, everything is affected—our mood, how we make decisions, the way we perceive events as they are happening. Our judgment is impaired. Our memory is no different. If you're not getting decent rest, your brain won't be able to store or format memories effectively.

We do not understand the exact workings of our brains well enough yet to fully know how the brain's processes happen. What we *have* found out is that in order to learn or retain new information, our brain processes information while we sleep. Good sleep allows for solid memory formation. When we do not get enough sleep, our memory formation and storage is impaired. This can have detrimental effects on long-term memory. The old saying, "sleep on it" has more meaning when you look at things from this perspective.

Thyroid Malfunction

Medical science is still uncovering the effects of the thyroid on the body, but they have discovered a relationship between memory and thyroid function. The thyroid produces hormones and regulates growth and development, as well as controlling metabolism. If your thyroid is not functioning properly, you can suffer from extreme fatigue, hair loss, and either weight gain or loss.

Hyperthyroidism can present you with cognitive issues, including a decline in memory function. When thyroid levels are abnormal, one may suffer from impaired judgment and reasoning, lack of concentration, and memory problems.

Vitamin B12 Deficiency

As we get older, our ability to absorb vitamin B12 decreases. Vitamin B12 protects the brain cells, possibly fortifying against forgetfulness and memory loss.

Medical science has shown that individuals with low vitamin B12 levels display poorer learning skills and have worse memory and cognitive abilities (Köbe et al., 2016).

Depression

Depression affects people differently. However, most sufferers say they feel confused and struggle to concentrate. They find it difficult to make decisions. Depression has been linked to short-term memory loss (Dillon & Pizzagalli, 2018).

Alcohol Abuse

Acute alcohol abuse can result in short-term memory loss. Consuming alcohol every day for an extended period of time can affect long-term memory. Alcohol in one's system also affects sleep quality, which impairs memory-forming ability.

Medication

Many medications state "drowsiness" as a side effect, which can have a negative impact on memory. Although many common pills such as antidepressants, anti-allergy meds, sleeping tablets, and pain meds can cause confusion and sleepiness, taking one occasionally shouldn't have a long-term effect.

Any medication, though, whether having drowsiness as a side effect or not, can have adverse memory effects if used in large quantities. Remember, medications alter your brain chemistry, which can interfere with memory formation, storage, or recollection.

Once you have identified which of the above factors may be affecting your powers of recollection, you can begin to take the necessary steps to enhance your memory.

The Solution

Are you ready to step into the world confident in your memory and your recall? Once you start learning mnemonic techniques, you'll leave behind the frustration of walking into a room and not remembering why you are there, or forgetting your wedding anniversary, or your spouse's birthday.

Regardless of your age, mnemonic strategies can help you develop a sharp and clear mind. Improving your memory is also good for cognitive function and everyday skills. In the corporate world, having a good memory has many benefits. How do we perceive people who are “scatterbrained”? Would you trust someone who was considered scatterbrained with a high-profile project, especially if they frequently forget to do things? Would you do business with an absentminded salesperson who forgets their appointments or forgets to turn an order in?

Being scatterbrained is not a positive in the corporate world. But you may be asking yourself why you should develop your memory when technology is advancing and your phone or laptop reminds you of tasks needing to be completed. I ask you this: Have you tried to live without your devices for a week? That should give an indication of why memory is so vital.

Developing your memory is one of the best gifts you can give yourself. Mnemonics makes the process interesting and fun. You will see the difference in your work environment and the way people react to you. You will start to take on more responsibility, as people will find you to be reliable. Your personal relationships will improve because those closest to you will feel like you're lavishing them with attention and remembering their every word.

Memory training and mnemonics reorganize information in your mind by personalizing it. This allows you to recall information quickly without having to use your long-term memory frequently.

Are you starting to see how mnemonics can help you?

Chapter 1: The Importance of Memory

Everything we do on a daily basis works off of memory, even though we may not realize it. For example: you are working on the annual report for your company. Your brain is focusing on the information that you are putting in, but at the same time you are typing, forming sentences and adding punctuation, all from memory. You aren't actively thinking about punctuating your sentences. You just do it. This is part of your implicit memory, which is just one of the many forms of memory we use.

How we use our memory is important. It allows us to recall the skills we have acquired over the years, as well as helping us to learn and develop new skills. Technology is a perfect example of how we have to learn and adapt to new things. Windows 7 used to be the most popular Microsoft operating system, until Windows 10 was released. Everyone with a computer had to learn how the new operating system worked and how to navigate it so that we could continue to do our work effectively. Sometimes it can take us up to a week to become familiar with a new "program," but then we start to navigate our way through very quickly without realizing that we are even doing it.

Why Is a Good Memory Important to YOU?

What would you do if you weren't able to Google an answer to a question? Or use your GPS to get to a job interview? Technology has made our lives convenient, and all too often we rely heavily on it. But what would happen if all our technology disappeared in an electromagnetic pulse tomorrow?

There are a number of benefits to having a good memory. However, it's a bit more complicated than just remembering things. Our memories help mold us into the individuals that we are. A great memory has many advantages. It can be of assistance developing interpersonal relationships, which can lead to career progression as well as helping you lead a happier and healthier life. With good recall, you will be less stressed and more confident, especially in meetings where you may have to recall names of clients or present complex information.

A great memory will keep your brain active and help slow down memory loss. More importantly, you need a good memory to help you make the right decisions. As you build up a reservoir of experience and knowledge, you become better at problem solving since you are not making decisions based on an impulse.

Having a good memory doesn't mean that all you can do is recall a long list of words or a sequence of numbers. It means that you can also recall useful information a few weeks, months, or years later. With a good memory, it's easier to be more organized and more focused. With more focus, you will be more productive and won't have the brain fog that people often feel later in the afternoons.

You will recall answers quickly while others are left turning pages to find the answers in their notes. As your brain turns into a finely-tuned machine, your mind will grasp concepts, apply them to situations, and look at the challenges that can arise and the possible solutions. Your memory (semantic and episodic) begins connecting dots and seeing patterns that won't necessarily make sense to those around you until you show them how things are connected.

In social settings, having a notable memory will also make you a well-rounded individual, able to converse on a variety of topics on all intellectual levels. You may even be the most interesting person in the room, due to your wide general knowledge. The biggest benefit of having a good memory is that you will take better care of yourself.

What do Usain Bolt, Roger Federer, and Rory McIlroy all have in common, apart from being some of the best sportsmen in the world? They all have raw talent, but they still practice and put the effort into becoming number one. Persistence and practice! A good memory isn't like winning the lotto. You aren't born with it, and you don't just find one by good luck. A good memory has to be developed. You need to flex the brain, just like you would flex any other muscle in your body. It needs to be challenged, and you need to practice every day. Not only will you have a good memory, but you could possibly turn your memory into a supercomputer.

What Can You Expect When Your Memory

Improves?

You're never too old to start improving your memory! Once you start you can expect the following benefits:

- You'll learn new concepts.
- Brain cells will rejuvenate.
- It will be easier to resist distractions.
- You will be more focused.
- You'll see an improvement in your ability to analyze.
- Problem-solving skills will improve.
- Reactions will be quicker.
- Free up brain space by developing knowledge.
- An increase in creativity
- Improved reasoning
- Enhanced soft skills

Improving your memory will have far-reaching effects on your life and those whom you interact with. You'll see how these relationships start to evolve. By improving your memory, you'll be creating new experiences which your brain needs to pay more attention to, as opposed to how your brain responds to routines. This is taking you off autopilot so you're experiencing this on more than one level, which your brain will encode and turn into memory. Research shows that memories associated with strong positive emotion can help to aid against memory impairment (MacKenzie et al., 2014).

Are You Ready To Build A Superhuman Memory?

Your brain is capable of infinite possibilities! You're just a few steps away from starting a memory journey that will be unforgettable (yes, I did that).

Before we get into the technical aspects of memory, I have a few questions I'd like you to answer. They're for your reference only, but understanding why you're on this journey is as important as the action of being here.

Feel free to write your answers right into this book, where you can refer back to them easily at any time.

Chapter 2: Memory Facts

Memory is not something you see in the news often. In recent years, though, some fascinating discoveries have been made that shed some light on different types of memory and their mechanics.

Many of the scientific findings about memory never become well-known to the general public, being published in medical and scientific journals for fellow scientists and researchers to read. 2019 was a bumper year for memory research. Here are 5 new and interesting discoveries about our memories and memory improvement.

Memories Form While We “Rest”

For years it was believed that our brains rest in periods of relative silence while we sleep. But recent research has discovered that the delta waves previously thought to be the cortex resting are actually periods of “coding” of information for memory storage purposes (Todorova & Zugaro, 2019).

The hippocampus and cortex move information back and forth while we’re asleep, in a fashion similar to brain activity when we’re awake. After each series of information sharing, there is a period of “silence” known as a delta wave. Contrary to previous belief that this period was simply a rest, scientists discovered that during this time the brain is forming groups of neurons that were activated during the day.

These findings suggest that the delta wave is linked to memory consolidation. The neurons selected in this process are neurons that played a role in tasks during the day. This suggests that this may be the brain’s way of choosing the particular neurons it needs to form memories correctly.

It goes without saying, therefore, that a good night's sleep helps us store memories more effectively, as a deep rest facilitates this process.

Language Plays a Role in Memory Retention

According to a 2019 study, your native language can help predict the effectiveness of your working memory (Amici et al., 2019). Languages can be categorized as either left-branching or right-branching, which refers to the order in which the subject and the details describing the subject are found within a sentence.

English is a primarily right-branching language. Sentences begin with a subject and continue on with more details. For example: The man (subject) with the red hair was at the store (details).

Languages such as Japanese and Turkish are left-branching. The above sentence would look something like this in a left-branching language: With the red hair, at the store (details), the man (subject).

It's accepted in the memory field that when faced with a classic list of items and asked to remember them in order, people will more easily recall the items at the beginning of the list (primacy items) and at the end of the list (recency items) than those in the middle (Baddeley et al., 1993).

While factors such as IQ and cognition can have an effect on memory, research indicates that persons whose native language is a left-branching one may retain information more easily than those who speak right-branching languages.

Scientists believe the reason for this phenomenon is due to left-branching language speakers' need to retain initial sentence information in order to understand correctly, while right-branching language speakers retain less information as the sentence goes on because the main information is at the front.

It could be suggested, therefore, that learning a language in the category opposite from your native tongue would be helpful for improving memory.

Walking Through a Doorway Triggers a “Forget” Response

This fact in particular fascinates me, as it's an action we all do on a daily basis. Walking through a doorway triggers the brain to forget information it's

just been exposed to, as does “mentally” walking through a door. Researchers have labeled this the “location updating effect” (Lawrence & Peterson, 2014).

The results of multiple similar studies suggest that a doorway is seen as an “event boundary.” The brain interprets it as one situation ending and another beginning and so quickly gets rid of information that it finds irrelevant to make space for incoming information from the new environment. There is some argument that memory retrieval works better in the same environment and context in which the initial action occurred (Dame, 2011).

Interestingly, while the physical evidence supports this theory, further research has shown that even *visualizing* walking through a doorway creates the same effect. The effect appears to be lessened slightly when the subject has interacted with their environment, but the location updating effect still occurs to a large extent (Pettijohn & Radvansky, 2018).

There is some evidence pointing to the fact that being conscious of the environment and making an effort to “keep things in mind” can have a positive effect on memory retention (Stein et al., 2016) and lessen the strength of the location updating effect in short-term memory.

Technology Makes Your Memory Worse

Although the rise of technology has brought about many positive changes, an improvement in memory is not one of them. There’s no question that technology *can* be used to help improve memory. But the difference is in the way it's used; a language learning application can be useful, but social media can be detrimental.

Scientists studying memory have found that when we expect to be able to access certain information easily in the future, our recall of that information is noticeably less (Sparrow et al., 2011). Another factor that appears to be relevant is a phenomenon known as “transactional memory.” In the simplest terms, “it’s not what you know, it’s who you know.” Although we could learn how to change a tire ourselves, there’s no need to if we can call someone who knows how to do it. We could learn how to cook, but why do so when we can buy a readymade meal (Wegner, 1987)?

In the same vein, we could learn to speak a foreign language, but why go to the effort if we can use a smartphone translation application? We could attempt to recall our friend's phone number, but it's saved in our smartphone memory, so we don't need to use our own. In this way, technology doesn't necessarily make our memory worse, but it does make it lazy. A 2014 study illustrates this point by proving that taking a photo of an item impairs our memory of it (Soares & Storm, 2018).

In addition to this, the digitization of the world means that we are exposed to much more information than we used to be. While this free access allows us to find the information we need quickly, the distraction of technology can also pose a problem to memory. Tony Schwartz, the CEO of The Energy Project, said this about the digital overload we face in today's world:

It's like having water poured into a glass continuously all day long, so whatever was there at the top has to spill out as the new water comes down. We're constantly losing the information that's just come in—we're constantly replacing it, and there's no place to hold what you've already gotten. It makes for a very superficial experience; you've only got whatever's in your mind at the moment. And it's hard for people to metabolize and make sense of the information because there's so much coming at them, and they're so drawn to it. You end up feeling overwhelmed because what you have is an endless amount of facts without a way of connecting them into a meaningful story (Gregoire, 2013).

Although technology can be used for good, the overuse of it has been shown to contribute to mental health problems (George et al., 2017), the development of Alzheimer's disease (Lindstrom et al., 2005), and sleep disturbances (Fuller et al., 2017). All of these have a negative effect on memory formation and consolidation.

Closing Your Eyes When Recalling Memories Can Help

Have you ever been trying to recall something and found yourself closing your eyes while you think about it? It's a natural thing when attempting to remember details. The science behind this has proven that it really works.

Studies as far back as 2007 have shown that witnesses who close their eyes when recalling information during questioning have more accurate recall than when their eyes remain open (Perfect et al., 2008). These results were supported in a 2013 study in which participants were witness to a videotaped event and asked to recall details a few moments afterward. A week later, they were asked to recall again and had more success with eyes closed than open (Vredeveltdt et al., 2013).

It is thought that the mechanism behind this is simply that shutting the eyes removes visual distractions and allows the brain to focus more intently on bringing up the memory in detail.

Other Interesting Memory Facts

- Of all the senses, sound is the one we remember least, with smell being the most memorable (Ruhr-Universität-Bochum, 2017).
- We have yet to discover exactly how much information our brains can hold.
- We don't forget childhood memories when we're adults. We begin to forget during our childhood!
- Our ability to identify faces peaks in our early 30s, and name recall in our early 20s.
- Fewer than 100 people have been diagnosed with Highly Superior Autobiographical Memory—a near-perfect memory of (almost) their entire lives (Center for the Neurobiology of Learning and Memory, 2017).

Types of Memory & Their Importance

Memory is complex and works on many levels. In 1968, Atkins and Shiffrin proposed a three-layered memory model which is still referenced today. Their

tripartite model consisted of the sensory register, short-term memory, and long-term memory (McLeod, 2019). Scientists in the field agree that there are four main types of memory, all of which serve different functions (Cowan, 2008). They are instant or iconic memory, short-term memory, operational or working memory, and long-term memory.

Instant (Iconic) or Sensory Memory

Take a moment to look at something in front of you right now. Once you've stared at it for a few seconds, close your eyes. You should see a vague impression of the object you were just looking at. This is also known as "sensory memory," which is perhaps the easiest way to understand it. It's a brief snapshot of a sensory experience we've just experienced, like a quick replay in our mind's eye. The term iconic memory is often used interchangeably with short-term memory, but the two are not the same thing (Lu, 2012). Interestingly, the audio form of iconic memory is called echoic memory.

We use iconic memory in everyday life, although most of the time we don't even realize that it's in use. Moments when you spot something out of the corner of your eye or catch a very brief glimpse of a person and attempt to recall it, you're using iconic memory. It only lasts a few seconds and is usually not taken any further than that in the brain. Sensory memory serves the purpose of informing us what is happening around us at the time and providing a brief flash so the brain can recognize, interpret, and decide if it warrants a reaction.

Short-Term Memory

Short-term memory refers to what's going on around us in the moment. It's often mistakenly thought to be memories of the past week or even the previous day. In reality, short-term memory lasts merely 20 to 30 seconds; less if there is no active thought about the situation. In addition to it being incredibly short, short-term memory can also only hold about seven items at a time (Rolls et al., 2013).

Short-term memory is exactly what it sounds like: the ability to hold a *small*

amount of information in the mind for a *short amount* of time. Because information is constantly coming into the brain, it doesn't take long for new information to replace what we've just taken in; hence the 20 to 30-second duration of short-term memory.

Much of our short-term memory is never converted into long-term memory. A good example is that moment when we get out of the chair and walk through to the next room and forget why we're there. The thoughts of those 20 to 30 seconds between standing up and arriving in the next room are not cemented as memory. You may pass by a family photograph on the wall and start thinking that you need to call your sister. That information then takes precedence in your brain, and the reason you walked into the room in the first place is forgotten.

The likelihood of short-term memory becoming consolidated depends on the investment we have in it. If it piques our interest and we give it attention, it's likely to stay for longer than 30 seconds. If it's something that's fleeting and we don't allocate much attention to it, the likelihood of it keeping space in our memory is not high.

Memory tests that require a subject to memorize and repeat a series of numbers or objects are pinpointing the short-term memory. It's sometimes referred to as memory span or attention span. The purpose of short-term memory is to store information temporarily before it moves on. It has been proposed that short-term memory also serves the purpose of allowing a brief time and space for comprehension of input, whether visual or verbal.

Operational or Working Memory

Many people use the terms short-term memory and working memory interchangeably. Short-term memory is a part of working memory—we can liken it to a television being one part of an entertainment system that can work on its own but is also part of a bigger network.

In current days, the phrase “working memory” has replaced “short-term memory.” Short-term memory holds information for roughly 30 seconds, before it's either discarded or the brain begins the process to consolidate it into long-term memory. It can be considered to be a kind of bus stop for information, before it moves on to another destination.

Working memory is one step further than short-term memory. Whereas short-term memory can only hold information briefly, working memory can retain, *as well as process* the information that comes into it.

Instead of the information leaving a ghost of an imprint (as it does with sensory memory), it is forwarded to the “control center” where the decision is made to send it to one of two centers in the brain—the visuo-spatial center or the phonological loop. Visual information passes through the visuo-spatial processing center before either being discarded or being sent on to long-term memory. Auditory or written information goes to the phonological loop for processing before moving on.

Essentially, working memory *is* short-term memory. If information is discarded before being processed at one of the centers, it’s considered short-term. If it captures our attention and moves to the control center for further processing, it’s considered part of working memory (Engle, 2002). Because the two types of memory are so similar, they’re generally considered to be the same thing, despite their subtle but apparent differences.

Working memory is critical for learning and reasoning (Cowan, 2013). It’s responsible for taking in information, storing it briefly, and deciding where to send it. In the processing centers it is reinforced so that it is able to be remembered even though the physical stimulus is no longer available. The duration of the recollection depends on whether it stays in working memory (a short duration—just as long as the information is needed for performing the tasks at hand) or is forwarded to long-term memory (an extended duration).

Long-Term Memory

Long-term memory refers to information stored over an extended period of time. Usually, long-term memory is accessed after a delay where the individual’s attention has been elsewhere. Anything from decades ago to a few hours ago is considered long-term memory.

Research indicates that long-term memory, visual memory in particular, has an extremely large capacity for detail (Brady et al., 2008). Once information has moved from working memory, through one of the processing centers, and has been consolidated into long-term memory, it is stored in the brain outside

of our current conscious awareness. When we recall a long-term memory, we are bringing that piece of data back into our working memory for the moment.

The strength of recollection is affected by the importance of the event. Occasions like weddings, graduations, losing a loved one, or making a big lifestyle change tend to be stronger and easier to recall. Weaker memories may require a reminder or prompt in order for them to be recalled, and even then details may be missing.

Memories that are frequently accessed become easier to bring to the forefront of the mind. Accessing a memory requires use of particular neural pathways, and regular use of the same pathways causes them to become stronger. Interestingly, while the long-term memory has a near-infinite capacity, memories can be forgotten. Neurological disorders can be to blame, but in cases where no neural reason is found, research demonstrates that lost memories are often the result of “active deletion” (University of Edinburgh, 2016).

Three types of long-term memory have been identified:

- Procedural
- Semantic
- Episodic

Procedural Memory

Procedural memory is the category of memory that remembers how to do things that we’ve learned (Zichlin, 2011). It is what’s known as implicit memory—that is, it does not involve active thought. It is completely automatic.

Consider things like:

- Driving a vehicle
- Making a sandwich
- Engaging in one of your hobbies (for example, playing a musical instrument, gaming, or performing exercises in the gym)

We do not have to put conscious thought into doing these activities. Every move is automatic because these actions are common in our everyday lives.

Semantic Memory

Semantic memory is known as explicit memory or declarative memory. That means it is conscious memory. This type of long-term memory stores facts about the world around us. It includes things like language (although the action of speaking is procedural memory), geography, and general knowledge (McRae & Jones, 2012).

In order to bring these memories to the forefront, we need to put some conscious thought into it, even if it's not much. Just because you know that Paris is the capital of France, it doesn't mean you don't have to think before answering it. The thought may be fleeting, but it is there.

Semantic memory is all about concept. General knowledge serves no purpose if we can't link it to the current situation and use it to assess our surroundings and situations. It is exclusive of personal experience and focuses completely on facts.

Episodic Memory

Episodic memory is another case of explicit memory. This type of memory refers to the knowledge we have that is based on personal experiences and events. This is our autobiographical memory—our recollections of things we have been through.

Episodic memory includes things like:

- Childhood memories
- The day you met your spouse
- An outing you enjoyed
- An injury that occurred
- What you had for dinner last night

These kinds of memories are often accompanied by emotions. Interestingly, memories can be recalled more easily when the current mood matches the mood of the memory (Mecklenbräuker & Hager, 1984).

It's interesting to note that long-term memory isn't stored in one particular place in the brain. They're stored in multiple places throughout the motor cortical circuits (Max-Planck-Gesellschaft, 2013).

Long-term memory is what makes us who we are. Without our long-lasting memories, we wouldn't recognize our family members, friends, or colleagues. We wouldn't recall what we like and dislike. We would have no

recollection of how we came to be here or how to exist in the context of our world.

While long-term memories have huge significance to us, the other types of memory are equally as important, even though they don't last nearly as long. If one of these memory types is impaired, a domino effect is created that extends to the other memory types.

The Physiological Process of Memory

Now that you know the different types of memory and their relevance, let's look at the way memory functions in the brain. I feel that learning a little about the physiological process of memory can be helpful to those wishing to improve their memory. In the same way that, for example, a smoker feels motivated to quit after learning exactly what is happening to their lungs and in their brains when they inhale, understanding what is going on in the brain when memory is being formed can be both educational and motivational.

Like any function in the body, memory is a series of chemical, electrical, and physical reactions. As we went through the various types of memory above, you should have gained an idea of the initial stages of memory formation. The process begins with an external stimulus. This stimulus is detected by sensory neurons, of which there are five types. These sensors pick up on environmental factors such as temperature, pain, hunger, sight, sound, taste, and others.

Once a stimulus is detected, if interest or attention is given to it, short-term memory is activated. Once the information hits the "control center" of the brain, it's sent to whichever processing area is appropriate. Emotions associated with an event go to one particular processing area, while visual or auditory stimuli go elsewhere. The hippocampus is where the widespread pieces of a single memory come together again and form a complete picture.

The hippocampus is the ultimate decision-maker about whether or not a memory goes on to become a long-term one or not. Memory consolidation (or transferring), which happens largely while we sleep, occurs in the hippocampus and is a complex process of comparison and assessment.

It's been suggested that once episodic memories have been consolidated in the hippocampus, they are stored in the neocortex. Recent studies have indicated that memory fragments or details may remain in the hippocampus, while emotions associated with memories appear to reside in the basolateral amygdala (Trafton, 2017).

It's also worth noting that the recording of memories during this process can be influenced by our emotions or mood in the moment. Where our attention is in a given moment will greatly influence the experience we remember. This doesn't mean there's anything wrong with the process of memory creation—it just means that our personal perceptions make a big difference for what we remember and how we remember it.

Neuroplasticity and Cognitive Function

Memory is something we all share. We're born with it, but some of us have "worse" memories than others. If you're one who laments your own ability to remember events, names, or dates, there's no need to worry—neuroscience proves that memory training is actually effective and has great merit to it.

Memory is just one aspect of neuroscience, but it works the same way in the brain as other cognitive processes—information travels via neural pathways. A bad memory can be compared to a road riddled with potholes. You're going to get to the other end, but it may take longer, and you could be in a different state when you finally get there! In the same way, memory can sometimes struggle to get from one place to another via neural pathways. In most cases, it's the recollection of the memory that's the problem, not the creation.

Neuroplasticity is the ability of the brain to adapt to change. The brain has an amazing ability to shift in response to its environment. The story of Kim Peek is a relevant illustration of how the brain adapts in order to survive. Peek was born without the bridge between the two hemispheres of his brain, as well as missing connectors in other areas. It's thought that, due to this abnormality, his brain formed its own, unique connections—a prime example of neuroplasticity.

Kim Peek became well-known for his extraordinary memory. If a man born

with the main link in his brain missing can become a memory expert with almost superhuman abilities, how much more can we, with healthy brains, rewire less serious neural pathway problems?

Building Neural Pathways

Neuroplasticity is, literally, the brain creating new pathways in order to move information around efficiently. It can even grow new neurons, via the process of neurogenesis, to facilitate neuroplasticity.

Neuroplasticity is still a relatively new concept, and research is in the works.

There are two accepted branches:

- structural neuroplasticity: the strength of connections changes
- functional neuroplasticity: permanent changes in synapses

Neural pathways are strengthened all the time, by learning, thinking, and mental work. Should something in the brain change and connections are severed, it's entirely possible to build new ones.

Examples of this neural rebuilding are evident in the cases of people who have suffered traumatic brain injuries. Relearning how to walk, talk, or recalling memories is completely possible even when the brain has suffered what's considered to be irreparable damage, because of its ability to form new neural pathways.

Science is discovering that this can have some serious implications in psychology, too. Not only can the brain bounce back from serious physical injury, but if pathways can be remade, does that mean it's possible to rewire our brains to do away with depression, anxiety, fear, or anger? The possibility is worth exploring. It could lessen the need for chemical medication and the side effects that come with it, improving the health of both body and brain.

Neuroplasticity is one of those hidden superpowers we all have.

If we only learned how to use it, we would see amazing benefits, like:

- Recovery in varying degrees from brain trauma and medical events
- Enhanced memory ability
- Increased ability to learn
- Increased cognitive abilities

Neuroplasticity and Learning

When we learn something new, we strengthen those neural pathways in the brain. Learning facts could strengthen your semantic memory, but may not have a large effect on neural pathways. Something like learning a different language or how to play a musical instrument, on the other hand, has a much larger effect, due to the layered nature of it—things that employ visual, auditory, and motor skills in addition to memory.

The reason we often think that children learn quicker and more easily than adults is thanks to the neuroplasticity of their brains. And this is only partly true. The older we get, the more our brains get lazy. As adults, we need to put more thought into learning, memory, and getting our brains working. But if we'll do it, we can see great gains.

How Training Your Memory Helps

Understanding how neuroplasticity relates to learning should give you a good idea of how memory training can help rewire pathways in your brain. Mnemonics is actually touted as one of the tips to improve your neural functioning and prime the brain for neuroplasticity to function.

Creating a perfect environment for your brain to use its own resources depends heavily on your lifestyle. Your sleep cycles, what you eat, what media you consume, and how you spend your time make a big difference.

Memory and neuroplasticity are intertwined—you can't improve one without the other being affected. Beginning a memory training plan will improve your memory, but it will also assist your brain in building new pathways as you learn.

Priming yourself for neuroplasticity will automatically put you in a better position to gain memory power.

How To Boost Your Neuroplasticity

Priming yourself for neuroplasticity is as simple as adding a few things to your day-to-day life.

- Train your memory!
- Use your non-dominant hand.
- Learn an instrument or a foreign language.
- Do something creative; art or dance are good examples.
- Read and write; a journal is a good way to do this.
- Travel and have new experiences.
- Try intermittent fasting; it improves cognitive function.
- Get more sleep!

Summary

Memory research has been more prominent in science of late and has given rise to some fascinating discoveries in recent years. Who would have thought that:

- Our memories set in while we sleep.
- The language we speak could affect the efficiency of memory.
- Walking through doorways triggers forgetting.
- Technology *can* make your memory worse.
- Closing your eyes can help you recall memories more easily.

These facts are only the tip of the memory iceberg. This amazing mechanism is present in all of us, and can be found in four different types:

- Sensory or iconic memory
- Short-term memory
- Operational or working memory
- Long-term memory

Long-term memories can be further split into procedural (learned skills), semantic (facts and knowledge of the world), and episodic (personal experiences). Having some knowledge of different types of memories and how they form can be educational, motivational, and helpful for improving memory processes.

Chapter 3: The Memory Tests

Are you ready to try a couple of quick tests to see where your memory stands?

In today's world, many memory tests can be done online. I find it easier, as well as more practical, to do a test with a pencil and paper. Perhaps I'm old school, but there's a feeling of purpose when doing a practical, tangible test.

I've chosen two helpful, easy-to-do-at-home tests. You will need an assistant to help you out, but they're both very easy to do with just two people.

- The Eyewitness Test
- The Tray Test

A test worth doing for those who are concerned about Alzheimer's is the SAGE test. SAGE stands for Self-Administered Gerocognitive Examination. It was developed by researchers at Ohio State University, and it's made with older people in mind. It's meant to be an early detection system for dementia. That doesn't mean young people can't do it, though, so it's a great way to start testing your memory functions.

There are four variations of the test, but each is similar enough to serve the same function and report the same results.

You can choose a test here: <https://wexnermedical.osu.edu/brain-spine-neuro/memory-disorders/sage>

The Eyewitness Test

This will test your powers of observation, but more than that, your short-term memory. Have your assistant come into the room from outside. She will walk around the room, doing various things, and then leave again quietly. Some things she could do include:

- Change the clock time.
- Take a book out of the bookshelf.
- Put something in her pocket.
- Say something.

- Sit on a chair.

Once she leaves the room, write down everything that happened. Be very specific about this. You want to record:

- What she was wearing
- Her facial features and coloring
- How long did she spend in the room?
- What did she touch?
- Did you notice her look at anything in particular?
- Did you notice if she took anything?
- What else did you see?

When your assistant returns, check the facts with her. See what you caught and what you missed. Did you notice the important things? Would you have made a good eyewitness?

This is the kind of test that you can do many times, each with a different outcome. It's a great way to test your memory down to the details.

The Tray Test

This is another simple but effective way of testing your recall. There are two different variations of this memory test, each as useful as the other.

- Recollection
- What's Missing?

What you'll need:

- A large tray
- 10 to 20 small items
- A towel or cloth
- Pencil and paper

Recollection

Have your assistant place 10 items on the tray in a particular order and cover them with the cloth. When you're ready, he or she will uncover the tray and

allow you to examine the tray and its items for one minute.

Once the cloth is back on the tray, write down as many of the items as you can remember. Once you're sure you can't remember any more, have your assistant bring the tray back and compare. How many did you get? How many did you forget? How many did you label incorrectly?

If you did fairly well, your assistant can increase the number of items on the tray and try again. See how you go as the number of objects increases, and find your threshold. This should give you a good idea of where your memory stands, and it's a fun test to repeat to see how you're progressing!

What's Missing?

If you would like to challenge yourself a little more, you can do the same version of this, but instead of adding more items as you go, start at 20 items and get your assistant to remove a few at a time.

Other variations on this test could be:

- Reducing the viewing time
- Have your assistant switch out all items but one, and identify the one that remained.
- Try to identify the missing object by feel, if you're really keen on a challenge!

Your Results

Don't despair if your results are less than what you expected or would have liked. In fact, this just creates an opportunity for you to do amazing things from here on out. Nobody has a bad memory; in the words of Jim Kwik, memory expert, "There is no such thing as a good or bad memory; only a trained or untrained memory" (Mindvalley, 2017).

This book is filled with valuable information to help you get off to the best start you can in your memory training.

Chapter 4: The Biggest Key to a Sharp Memory

If I asked you to guess what the key to a great memory was, what would come to mind? Perhaps you'd think of mental clarity. Maybe a calm mind would be your first thought. Maybe you're of the opinion that a great memory is something you're either born with or you aren't.

I'm happy to tell you the answer is much more fun than any of the above. The biggest key to a sharp and effective memory is having an active imagination.

Imagination is what makes our sensory experience meaningful, enabling us to interpret and make sense of it, whether from a conventional perspective or from a fresh, original, individual one. It is what makes perception more than the mere physical stimulation of sense organs. It also produces mental imagery, visual and otherwise, which is what makes it possible for us to think outside the confines of our present perceptual reality, to consider memories of the past and possibilities for the future, and to weigh alternatives against one another. Thus, imagination makes possible all our thinking about what is, what has been, and, perhaps most important, what might be (Thomas, 1999).

Your Imagination & How It Relates to Memory

“Logic will get you from A to B. Imagination will take you everywhere.” ~ Albert Einstein

The majority of people on the planet have a working memory-creating system. When we think about imagination, it's not difficult to understand how it relates to memory. Let's do a quick imagination test. Imagine you are visiting Rome, Italy. Spend a few moments imagining what you would be doing on a day in Rome.

What did you imagine? Perhaps you thought of visiting the Colosseum. Maybe food came to mind—an Italian pasta with parmesan cheese. Did you picture yourself walking down a cobblestone street? It's possible that you've

been to Italy before, but even if you haven't, you should have been able to construct a picture in your mind of the streets, the food, and the sights.

Those who have spent time in Italy may be drawing upon episodic memory in order to reconstruct pictures. Those who have never been to Italy are still drawing upon memory fragments in order to imagine their experience. You need knowledge of the Colosseum, knowledge that the streets are cobblestoned, knowledge that parmesan cheese is used in restaurants. Even if you've never physically seen these things, you have a certain knowledge of them in semantic memory.

As Einstein says, "Imagination will take you everywhere." But it relies heavily on memory—both episodic and semantic—to create that picture in your mind (Abraham & Bubic, 2015).

Let's have a quick look at some interesting and little-known facts about imagination.

Imagination and Creativity Are Not The Same Thing

It's often taken for granted that imagination and creativity are one and the same. This is not true, and it's easily seen in their respective definitions in the Merriam-Webster dictionary.

Imagination : the act or power of forming a mental image of something not present to the senses or never before wholly perceived in reality.

Creativity: the ability to create, or the quality of being creative.

In the simplest sense, we can say that imagination is building mental pictures from memories, while creativity involves an act of creation. Some might argue that imagination is the act of creating an inner world or a mental situation. While this is true to an extent, imagination draws upon memories in order to do this. It's accurate to say, then, that nothing *new* is created when imagining—all imagination is simply a representation of memory, be it episodic or semantic. With that said, imagination is an oft-used skill in the actual process of creation.

The difference between being creative and being imaginative lies in *expression* . If imaginings remain in one's mind and are never physically expressed in the real world, one can be said to be imaginative. But should a

person take their imaginings and create something out of them—be it a book, a photograph, or a new way of doing a task—it then crosses the threshold into creativity.

Not all instances of imagination result in creativity! But true creativity requires a certain amount of imagination. In order to bring life to an idea, one needs to first construct the concept in their mind. British author Sir Ken Robinson explains that creativity is practical, while imagination is not. His take on imagination is that it's the single element that allows us to be the visitors to the natural history museum and not exhibits in it—imagination sets us, as humans, apart from other creatures (Robinson & Aronica, 2010).

Child-Like Thinking Can Improve Imagination in Adults

Research shows that “pretend play” in childhood—that is, using imagination in play—affects the development of creativity in adults (Russ & Wallace, 2013). The Oxford Handbook of the Development of Imagination suggests that the separation between imagination and creativity seems to increase with age. The authors highlight two key characteristics of creativity—discretion and intentionality—neither of which develop until adolescence, or, in some cases, adulthood (Runco & Pina, 2013).

It would seem to be around this point that the “child-like” quality of imagination is somewhat lost (Albert, 1996). It can be assumed that “life gets in the way” of creativity. In his 1996 research, Robert Keegan alludes to the idea that accumulation of knowledge, love for what they do, and sense of purpose are the things that allow for a continuity of creativity from childhood to adulthood (Keegan, 1996).

Whichever side of the argument we look at, the truth is clear: creativity begins in childhood and may or may not be carried over into adulthood depending on certain factors.

If you're interested in improving your imagination as an adult, thinking like a child could be key. I don't mean simplifying your thoughts—I mean we need to get back to the “pretend play” mentality. Research backs this up, too. In a 2012 study, subjects asked to imagine themselves as 7-year-old kids scored higher on “divergent thinking” tests (Lehrer, 2012).

Reverting to a child-like imagination is not as difficult as one may think. It

may involve reshaping schools of thought that have become second nature, but it certainly can be done.

Here are some key considerations about shifting to a child-like imagination. In order to make the change, we need to:

- Let go of strict self-control.
- Let go of limiting beliefs (“Some people are just born with creativity”).
- Allow ourselves the freedom to think “immaturely.”
- Take risks.
- Be willing to be wrong.
- Stop focusing on the possibility of embarrassment.

Imagination Is an Important Component of Empathy

Empathy can be defined as

the action of understanding, being aware of, being sensitive to, and vicariously experiencing the feelings, thoughts, and experience of another of either the past or present without having the feelings, thoughts, and experience fully communicated in an objectively explicit manner (*Definition of EMPATHY*, 2009).

In other words, the ability to empathize with someone means being able to understand their feelings on a deep level, to the point where you experience the same feelings. Scientific research as far back as 1985 has linked imagination with empathy (Rabinowitz & Heinhorn, 1985).

While there are various psychological stances on the phenomenon of empathy, it's accepted that imagination plays a role in the understanding of others' emotions. Empathy can include facets or “steps” such as experiencing the same (or similar) emotions as the other person (known as affect sharing), making an effort to consider a situation from the other person's perspective (mentalizing), and having a strong desire to help (Zaki & Ochsner, 2012).

Imagination comes into play when drawing upon semantic and episodic memory in order to construct empathetic emotion in oneself. It's entirely possible the empathizer has never been in quite the same situation as the other person, but a combination of memory and imagination allows them to feel how the other is feeling.

Emotion Can Have an Effect on Imagination

In his book, *Emotions and Imagination*, Adam Morton explains how complex emotions such as hope require imaginational input, while others such as fear engage the imagination in such a way as to compound the emotional feeling (Morton, 2013).

Emotion can trigger imagination. If there is a cause for someone to worry, it's common for the worry to extend from the current situation into possibilities that may or may not occur. In this case, the emotion leads to imagining worse, and in turn, brings about more intense emotion.

Similarly, imagination can trigger emotion. A simple way to illustrate this is to have a person imagine that their partner is being unfaithful. The more the situation is imagined, the more agitation is observed in the subject. When coming face-to-face with their partner after this exercise, the likelihood of similar emotions (i.e., agitation, anger, fear) being displayed to the partner is higher. In the same context, spending time imagining positive things about one's significant other leads to an increase in general happiness (Poerio et al., 2015).

Having an emotional connection to a particular person also has an effect on imagination. A study found that imagining a friend of yours in a particular situation engages the episodic memory, while imagining a stranger in the same situation fires up semantic memory (Wiswell, 2016). While there is still research to be done on the exact implications of the study, it suggests that emotional attachment plays a part in imagination.

Imagination Can Even Be Used While You're Asleep

Most of us have an active dream life. Even if we don't recall our dreams when we wake (we forget a staggering 95% of them), findings indicate that the average person spends around 2 hours each night dreaming. While the physiology behind dreaming is for an entirely different book, there is a definite link to imagination. A recent paper suggests that "dreaming is imaginative play in sleep" (Bulkeley, 2019). Another study finds correlations between the bizarreness of dreams and imagination (Hunt et al., 1993).

Considering these schools of thought, it's easy to see how one's imagination may play a part in the creation of dreams. But dreams are largely the subconscious mind running rampant, with very little input from the conscious mind. There is a phenomenon, however, in which one can become conscious in a dream, and it is in this state that the power of imagination shines.

Lucid dreaming is the experience of becoming aware in one's dream, while still in a sleep state. Some, but not all, lucid dreams can be controlled by the dreamer. In this state, when one's conscious, rational mind is slumbering, imagination is at the forefront. Studies have proven that, when becoming conscious in one's dream, the dreamer can make use of normal cognitive functions, such as memory and decision-making (LaBerge et al., 2018).

While this particular study technically proves that lucid dreaming and imagination are distinct, separate phenomena, the dream world is constructed entirely from imagination and memory. It is in this scenario, when one becomes aware of the fact that they are dreaming, that imagination can, literally, become reality. This is where the "imaginative play in sleep" idea becomes a conscious experience.

While some people are natural lucid dreamers, others may need to train to achieve it. But the research proves that imagination is an essential part of many cognitive functions, even so far as to be of importance while we sleep.

Summary

Just as we all have memory, every person has the potential for imagination. We tend to believe that some are imaginative and others aren't. While this may be slightly true in that some people have an easier time accessing and engaging their imagination than others, the whole truth is that we all engage in imagination.

Imagination and memory are intrinsically linked. With better imagination comes better memory (Grilli & Glisky, 2012). Imagination is not limited to children on a playground! As adults, imagination could be the biggest key to improving our memories. Who wouldn't want a legitimate reason to let their imagination run wild, anyway?

Chapter 5: How To Access Your Mind's Hidden Resources

What do Mozart, Garry Kasparov, Jim Kwik, Dexter the Boy Genius, and Nikola Tesla have in common? They all knew how to access the hidden resources of their mind.

If we wish to achieve great things, we cannot neglect our minds. It's easy, in today's world, to place more importance on taking care of our body. Healthy diets, fitness trackers, and low-carbing are popular trends. Homeopathic remedies and vaccinations are controversial topics. We are surrounded by information on how to treat our bodies, but our minds seem to fall by the wayside.

There are eight accepted areas of wellness that society agrees are essential to our well-being (Stoewen, 2017). They include the things we focus on daily as a matter of habit: physical, financial, environmental, social, spiritual, and emotional. The last two are mental and intellectual, and these two have to do with the mind. Neglecting these can throw us off-balance, even if we don't realize it at the time.

There are resources in our own minds that most of us don't even know are there because we don't take the time to develop this area of ourselves. These hidden resources are waiting for us to find them and make use of them! We all have these superpowers. It's just a matter of learning how to use them.

Real-Life Famous Case Studies

Science proves facts, but there's no substitution for real-life stories. There are thousands of extraordinary case studies out there, but I've selected five that place particular emphasis on memory. After all, that's what this book is about. Memory is one of the superpowers we have hidden away inside of us, and while these may be special cases, they're all an indication of how much we can achieve if we're open to possibility and delve within ourselves.

Kim Peek

This remarkable man was the inspiration for the feature film *Rain Man* . Although Peek was not autistic, as the film portrayed, his story is one that we can both marvel at and learn from.

Born in 1951, Peek was diagnosed with a multitude of conditions at birth. These included macrocephaly (an abnormally large head), a damaged cerebellum, and a condition called agenesis of the corpus callosum—essentially, missing the part of the brain that formed the bridge between the left and right hemispheres. In addition to the main connector being absent, Peek was also missing secondary connectors in the brain structure.

Despite these abnormalities, it was not long at all before Peek's parents began realizing that he was something special. He began memorizing information and displaying perfect recall from the age of 16 months. He devoured books and could quote from them without hesitation.

Peek never received conventional schooling, but he did consume an amazing amount of literature. One of his best known and most unique traits was the ability to read and take in two pages at the same time—one with his left eye and left side of the brain, and the other with his right. The information he read would be filed away in his memory and could be repeated at any point in the future without so much as a pause for thought!

He was also able to provide directions between any two places in the world, work out which day of the week any date in history was, recite Shakespeare plays verbatim, and count cards (although, when pressed to use this skill in real life, Peek politely declined, feeling it would be unethical).

Although his mental and intellectual abilities were noticeably above average, Kim Peek did have some physical signs and symptoms of his condition. He only began walking at the age of four and had trouble performing simple tasks due to his lack of motor skills. The neural components he was missing rewired themselves to serve him intellectually, although his physical condition provided some challenges.

Kim Peek had an IQ of 87, which is considered low. He's an extraordinary example of the fact that there's so much more to a person than a number—as well as a shining example of superb memory.

While there's little chance of any of us becoming a Kim Peek in terms of memory ability, his story illustrates that anybody can achieve great things, regardless of background, physical ability, or the opinions of society.

Dominic O'Brien

Dominic O'Brien is a fantastic example of an "average" person who has achieved amazing things through his own training and effort. He describes himself as an average school pupil, but he struggled with dyslexia and ADD. Teachers believed he would never amount to much in life because he had a hard time focusing in class and retaining information.

One of the most interesting parts of O'Brien's story is that he only began making an effort to train his memory at the age of 30! His story shows that memory training can be effective at any age—you're never too old to begin!

Dominic decided to begin practicing memory improvement techniques after watching a memory whiz on the television. He was astounded to see renowned mnemonist Creighton Carvello memorize a deck of cards, and that began a long fascination with mnemonics and memory.

O'Brien developed his own mnemonics techniques to train his memory effectively. He didn't just stop at that, though—he went on to win the World Memory Championships eight times and land a spot in the Guinness Book of World Records in 2002. He is, quite literally, a memory champion.

Dominic O'Brien is considered to be an innovator in the world of memory and mnemonics. Impressive for a boy who was told he would never amount to anything! If you've been worrying that you're too old, too busy, or not smart enough to improve your memory, take some inspiration from Mr. O'Brien.

Wolfgang Amadeus Mozart

Mozart is one of the most recognizable names in history. He's renowned for his musical skill and innovation, but did you know he also had superior memory skills? It's an accepted fact that at the age of 13, Mozart heard Gregorio Allegri's *Miserere* performed and went home and wrote out the whole score from memory.

It's difficult to find a reason behind this amazing feat of memory. There have been no other specific instances of Mozart performing astounding memory feats, but he was and is still known to have a near-flawless musical memory.

One might attribute this to the fact that he absolutely loved his art. It's been proven that emotion has an effect on learning and memory, so it would not be far-fetched to suggest that Mozart's musical memory arose, in large part, from his love for music (Tyng et al., 2017). There are also studies suggesting that music plays a role in cognitive function, so perhaps Mozart's musical lifestyle could have served him well in this sense (Lim & Park, 2018).

As well as the composer himself having a memory of note, science has hotly debated "the Mozart Effect" since it was proposed. It refers to an enhancement in neurological activity after listening to Mozart's music. The area of the brain that appears to be activated is linked to memory and problem solving (Verrusio et al., 2015).

Marilu Henner

If the name sounds familiar, Marilu Henner is an actress known for her roles in productions such as *Grease* and *Taxi*. She has another unique quality to her, though—she is one of less than 100 people worldwide who have been diagnosed with Highly Superior Autobiographical Memory (HSAM).

This unusual condition is characterized by an ability to remember almost every day of one's life in stunning detail. This is a unique condition—there is no hint of savant syndrome, nor has any mnemonic learning gone into these amazing memories (Parker et al., 2006).

Marilu uses her memory superpower to give her an edge in her career. She speaks of the fact that, although bad memories are as clear as good ones in those with HSAM, she uses the clear recollections to improve her performance and do her characters justice.

She's not just a talented person with a flawless memory, though. Henner is also an advocate for Alzheimer's research—she has an enormous belief in the power of memory. Marilu has used her position as an actress to petition for more funding for brain health and contributed towards UsAgainstAlzheimer's Uniting Communities for a Cure summit on brain health. In a world where plenty of emphasis is placed on physical health (and I don't dispute its

importance), it's refreshing to find someone advocating brain and memory health.

Clive Wearing

The case of Mr. Wearing is an unusual one and is equally fascinating and heartbreaking. Clive contracted a virus in 1985 that destroyed part of his central nervous system. It left him unable to form new memories or recall old ones. He was at the height of his career as a musicologist, musician, and conductor when he was struck by the virus. Clive is left with a memory that lasts less than a minute. He spends his days writing in a journal, with each entry stating the same thing: "I am now truly awake."

Despite his condition, there are two things that Clive has not forgotten: how to play and conduct music and the fact that he adores his wife. He greets his wife with joy upon seeing her, whether she arrives anew in the morning or walks back into the room after being outside for a moment.

While Clive's story may not be the most joyous, it also points to the fact that the things we love remain with us, even when our brains betray us!

Preparing To Access Your Mind's Hidden Resources

When you're interested in improving memory, you'll soon realize that memory is not a stand-alone thing. Each aspect of your day or night has an effect on your memory, so when you're preparing to access these hidden memory resources, you'll need to look further than just improving your recall. Remember the elements of wellness I mentioned earlier? In order to get the best results, you should look after yourself physically, mentally, emotionally, and spiritually.

If you've never taken steps towards accessing the deepest secret resources of your brain, there are some things you can do to prime your mind for the experience. My favorite brain-preparing tricks for accessing those hidden resources are:

- Meditation
- Good sleep
- Physical activity
- Family involvement

Meditation

Don't assume that meditation is something reserved for monks, Buddhists, or new-age millennials! It's a highly useful tool that can sharpen the mind. The regular practice of mindfulness meditation has been scientifically proven to improve cognitive functions, including those associated with memory (Brown et al., 2016, Lardone et al., 2018).

Meditation is not, as some mistakenly believe, the emptying of the mind. Instead, it's simply about narrowed focus. Allow me to explain. When meditating, one should not aim to "quiet the mind" or "remove all thought." Thoughts happen, and there's nothing we can do to stop them. Meditation should be about focusing on one particular topic, idea, or thought. For example, if you've ever searched online for meditation information, you may have come across mantras. A mantra is a short word, sound, or phrase that is repeated in order to help with concentration when meditating. You may have heard the word "Om" being used. Another common concentration aid is to focus on your breathing.

The goal is not to prevent thinking. It is simply to focus on one thing so intently that other things fade. When thoughts arise, allow them to pass by and focus once again on your mantra or your breathing. The goal is to be dedicated to concentrating on a single thing. You'll most likely find it difficult in the beginning—I certainly did—but with regular practice, you'll not only be able to increase the amount of time you meditate, but you'll also start to see the cognitive benefits.

Meditation helps improve memory by:

- Increasing concentration span
- Enhancing one's awareness of themselves
- Reducing stress
- Regulating emotion

All of these assist in improving memory. A longer concentration span enables

one to keep short-term memories in the mind for longer, more accurately assessing which are important. An increased awareness makes physical changes in the hippocampal region of the brain (Hölzel et al., 2011). Stress also has an adverse reaction on memory, so reducing it has a positive effect on memory retention.

How To Incorporate Meditation Into Daily Life

Thankfully, it's not a difficult task to begin adding a bit of meditation to your days. Five minutes is enough to start with, and even a meditation this brief can have positive effects! Here are some tips on how to start meditating every day. You don't need to follow all of them—they are simply guidelines that I found useful when beginning, and I hope they will assist you too.

When?

- When you wake up
- Before you go to sleep
- Any time you have a few minutes to yourself

Where?

- In a chair
- On the floor
- On the bed

How?

- In a seated position
- With a straight back
- With or without music (binaural beats are useful)
- Eyes closed
- Focus on your breathing, or a mantra

What Not To Do:

- Lie down (falling asleep is a real possibility!)
- Sit in an uncomfortable position (there's no need to pretzel your legs, for example)
- Play music with lyrics

Good Sleep

Sleep is when memory consolidation happens (Rasch & Born, 2013). This is

when that back-and-forth between the hippocampus and the cortex sorts our memories from the day into their respective files in our mind.

In addition to the obvious memory benefits, good sleep has a multitude of other health benefits (Vyazovskiy, 2015). These include:

- Lower cortisol levels
- Increased productivity
- Better emotional regulation
- Increased focus and attention span
- Happier mood

On the other hand, a lack of sleep can have detrimental effects, even if it's only a few hours missed. The implications of sleep deprivation can be far-reaching, and lack of sleep has been linked to public disasters (Worley, 2018). Sleep deprivation can also have a negative effect on memory (Stepan et al., 2019).

One should aim for 7 to 8 hours of sleep a night in order to function optimally, both physically and mentally.

How To Get the Best Sleep You Can

To get the best night's sleep you possibly can, you'll need to begin during the day. Here are some things to take note of and begin to change:

- Select (and stick to) a regular bedtime.
- Create a bedtime routine to “trick” your brain into understanding when it's time to sleep.
- Meditate before bed to calm your mind.
- Limit daytime naps.
- Reduce caffeine intake (and avoid it at least four hours before bed).
- Create a calming, comfortable sleep environment.

Physical Activity

You may not realize it, but physical activity affects the mind, too. Not only does it keep the body healthy and strong, it also has some surprising effects on memory. Studies have linked regular exercise to a stronger memory. Physical activity increases blood flow to the brain, which can assist in reducing inflammation and stimulating new growth of brain cells (Godman,

2018).

Interestingly, this seems to apply to both aerobic exercise and resistance training (Ludyga et al., 2018, Weinberg et al., 2014). The good news is that it's relatively easy to start being active in your daily life, and you don't necessarily need to join a gym to do it.

How To Add More Movement to Your Every Day

Exercise doesn't have to be weightlifting or hitting the treadmill every day. It can be incredibly easy to add more movement to your day without having to create a workout routine or do anything drastic. Simple things can make a big difference. Try:

- Doing a thorough clean of a small area every day
- Do some handiwork around the house
- If the store is nearby, walk instead of drive
- If you are driving, park further away than usual
- Take the stairs instead of the elevator
- Move while waiting (if in a line, you can work on flexing muscles; if waiting for someone, walk around the block or building)
- Wrestle with your kids
- Do some bodyweight exercises
- Find an active hobby

Simply being more mindful of moving can make a significant difference. If you need some extra motivation, why not:

- Get yourself a fitness tracker
- Find an accountability partner (if you can train your body and your memory with them, even better)

Family Involvement

Everything is easier when you have a sturdy support structure, and that's what family should be. Not only does it strengthen the resolve of the individual and keep them motivated to not let their family down, it has the potential to strengthen family bonds. Embarking on a journey towards a better memory alone can be done. But involving people you care about will add an extra element of motivation.

This is largely about accountability. It's great if you're meditating daily, getting healthy sleep, and exercising regularly. But the act of being accountable to someone you care about and don't want to disappoint is of greater value than you may realize.

Getting your family involved can be the thing that makes all the difference. Here are some easy ways to involve your family in a way that won't be difficult or pressured, for you or them:

- Help each other—while someone may be your accountability partner, you should be theirs too.
- Have a daily check-up conversation in which you discuss your progress on the day.
- Start a training program together.
- Ask them to write down one thing every day that they noticed that shows you're improving.

Summary

Memory is something we all have access to. It's about what we do with it that counts. Dominic O'Brien has proven that age is not a limitation when it comes to memory improvement. Clive Wearing and Mozart show that love and passion are essential underlying factors for memory retention.

Once we realize that we all have extraordinary memory abilities within us, it can be intimidating trying to work out how to access them. Preparation is key in this case and should involve priming of four important aspects of ourselves: physical, mental, emotional, and spiritual. Activities that can help create a great foundation on which to build a superhuman memory include:

- Meditation
- Healthy sleep
- Physical exercise
- Family involvement

Making sure these four are taken care of can give you a huge boost in the memory game before you even begin!

Chapter 6: Five Golden Rules of Mnemonics

I've spoken plenty about memory and imagination, but now it's time to get into the real meat of the topic. You're here to learn how to improve your memory, and I'm going to teach you some mnemonic techniques to do just that. First things first: What are mnemonics? Quite simply, mnemonics are information retention and recollection techniques. They're **memory tricks** — unique ways of encoding information that makes it easy for you to recall that information at a later stage.

If that sounds complicated, don't be put off. In reality, the idea behind mnemonics is not complex. They can be as simple as:

- A rhyme
- An acronym
- A picture

For example, a mnemonic most of us know is the classic old ABCs song that we're taught in school. I'm sure most of us can call it up right now without much thought. Another traditional example is using the name Roy G. Biv to remember the colors of the rainbow in order.

Your next question may well be "How do I know mnemonics will work?" It may seem rather far-fetched that some simple imagination can improve your memory, but it's the truth. The key to effective mnemonics is associating them with something meaningful to you. In this way, they become easy to bring to the forefront of your mind once again. If you're a musical person, using jingles as your favorite form of mnemonic may be more effective than others, for example.

A mnemonic that works for you may not work for someone else. Mnemonics are highly personal—at least, the most effective ones are. At their core, the techniques are the same for everyone, but it's the personal touches that truly do the job of cementing the information in your mind.

You'll find that as you get better with mnemonics, they'll become easier. If you're interested in using mnemonics to their full potential, there are five golden rules to keep in mind.

1. Make Them Relevant to You

As we learned earlier in the book, emotion plays a part in memory retention. Something that is of significance to you has a higher chance of being remembered while things that are of little importance to you are more likely to pass right through your short-term memory with no recording.

If you're attempting to create a mnemonic for, let's say, the name of the new girl who's just started in your office, link it to something you *feel*. Let's imagine her name is Mona. If you try to remember her as being a moaner, you may come up short (especially if she's a naturally cheerful-looking person). But choosing to remember her as My Other New Assistant could work better for your memory, by playing off your real-life working relationship.

Any time you can add emotion, you should. While the example above may not be filled with emotive feeling, it creates a definite link that's related back to you and how you feel about Mona. The more relevant you can make it to you, your life, and your situations, the easier you'll find it to recall details.

2. Make Them Funny

Humor is memorable—much more so than flat, dry language. If you can make your mnemonic humorous, your chances of committing it to memory are increased. Imagination and creativity are key to creating a memorable mnemonic.

Picture this scene: you're holding a shirt that smells like bacon, has the texture of gravel, makes a ticking noise, and tastes like strawberries. Take a few moments to imagine this in minute detail. Pay attention to each part, how it feels, the reaction it invokes in you. Then, drink a glass of water.

When you come back to the scene you've been imagining, how easy is it to bring it back to mind? You may find it easier than you expected, especially after your concentration has been broken by a different task. Not only is a gravelly, ticking shirt that smells like bacon, and tastes like strawberries a funny thought, it's unusual enough to be memorable and likely to bring about

a smile.

Humor and uniqueness are helpful, but once again, they should be relevant to you. The key is to choose something that will come back easily when attempting to recall it, and if one type of humor works better for you than others, then that's what you should be incorporating.

3. Use Visuals

Visualizing can be an extremely powerful technique. There's a reason it's touted as a great aid to meditation and rewiring neural pathways. The brain processes visual data much faster than any other type (Eisenberg, 2014).

A friend of mine shared a mnemonic that she used to remember her new colleague's name. Upon meeting Ellie for the first time, she noticed how her hair was frizzy, and she had a fairly long nose. This became extremely easy to turn into the visualization of an elephant, which, as you can imagine, stuck. She never forgot Ellie's name after that!

You can let your imagination run wild with visualization. It's not only a useful mnemonics trick, but it's also a great way to start working your imagination! Remember "pretend play"? That's basically what this could be, if you start working your imagination on a regular basis.

4. Find What Works For You

There are many types of mnemonics—rhymes, acronyms, jingles, visuals, and more. Although I recommend trying them all, you're likely to find one that works best for you. Perhaps you're a musically-inclined person and jingles really do it for you. Perhaps you're artistic, and visualizations are your most effective recall method. Maybe you prefer a rhyme or acronym.

If you find one that works better for you than the rest, use it! Don't feel like you need to use them all, or even use a combination. While it's helpful to have a variety, you can always choose a new one if you want to try something different. Don't be afraid to choose one and use it extensively.

5. Practice As Often As Possible

The opportunities to use mnemonics are almost endless! You can quite easily find chances to practice every day. If you need to:

- Remember a name
- Recall a birthday
- Commit a phone number to memory
- Take note of the order of a list of items
- Order takeout for the family

Mnemonics can help! Be mindful of situations in which you can use them, and you'll soon find yourself incorporating them without even thinking.

Bonus: Repeat, Repeat, Repeat

Again I say, repeat, repeat, repeat! Mnemonic techniques are handy tricks to train your brain into remembering things, but my bonus golden rule is repetition. Those who have never attempted mnemonics may remember names and numbers by simply repeating them over and over. This is effective to a certain degree, and while these techniques are certainly superior, repetition has its place and that place is an important one.

One can learn to play a musical instrument using hacks and tricks to progress faster. But the fact remains: you have to practice the same things daily in order to ingrain them in your memory and your muscle memory. The same is true for mnemonics! The techniques we will speak about are incredibly useful for giving you a memory boost and improving your recall. But you will need to practice them again and again.

I'm not referring to golden rule number five when I speak of practicing. Instead, I mean repeating your created mnemonic until it is ingrained in you! There's no use creating an unusual and memorable rhyme or acronym and not looking at it again once you've made it. Devour the mnemonics you create until they're a part of your mind.

Summary

Mnemonics are not hard to get the hang of. Following the five golden rules of mnemonics can help you learn how to use them effectively in the shortest time possible.

1. Make them relevant to you and your situation.
2. Add some humor! Funny is not as easily forgotten.
3. Visualize. It adds an extra layer and strengthens your recall.
4. Create your own techniques—no need to stick to the classic stuff!
5. Practice makes perfect, and there's *always* an opportunity to practice.

Bonus tip : Repeat, repeat, repeat.

Keep these five golden rules in mind as we progress through some mnemonic techniques. You'll find that implementing them throughout the techniques yields a higher success rate!

Chapter 7: Five Easy Mnemonic Techniques & Exercises

Now we're into the practical part of the book. I'll be sharing some quick and easy mnemonic techniques and giving you some exercises you can try. Don't expect to become proficient at these immediately. If you have no prior knowledge of mnemonics, it may take some work before they become second nature.

The strategies in this chapter are aimed at mnemonics beginners, or, as I like to call them, Mnemonics Mnewbies. I encourage you to try each one and give it some time before deciding whether or not it works well for you.

- Rhymes
- Acronyms
- Jingles
- Break It Up
- Make It Up

Rhymes

Example:

Thirty days hath September, April, June, and November.

All the rest have thirty-one,

Excepting February alone.

It has but 28 days clear,

And 29 each leap year.

Rhyming mnemonics are effective as our brains naturally associate words that sound similar, and the cadence of rhyming lines is comfortable and rhythmic. There are plenty of mnemonic rhymes that already exist to help you retain and recall information.

It's not too hard to create your own, though. All you need is some creativity! If you're needing to remember that your sister Carol's birthday is on the 3rd of June, all you need to do is put it to some kind of rhyme scheme.

Carol would like a barrel of spoons,

For her birthday on the 3rd of June.

See how simple that is? Add a mental picture of Carol digging her arm into a wooden barrel filled with silver spoons, and your mnemonic is complete. If you need to be more specific, try rhyming the important words. For example, if you remember June but forget the 3rd, tweak it slightly to emphasize that part.

Carol, I *heard* , was born on the 3rd

And would like a **spoon** for her birthday in **June** .

It doesn't have to make sense to anyone but you. Chances are you won't be sharing it with anyone—it will only ever be heard by you. So you can be as creative and wild as you wish with it.

Rhymes can be created for just about anything you need to remember—names, dates, lists, orders, and places. Give it a try.

Exercise:

To practice your rhyming mnemonics, try this exercise:

- Select something that you have trouble remembering. It can be a name, place, date, or list.
- Choose a few words that not only rhyme with your name/date/list item, but also have some relevant meaning (if possible).
- Write out your first line in a rhythm that suits you.
- Get creative and finish the rhyme!
- Repeat, repeat, repeat (until your rhyme is memorized).

Acronyms

Acronyms are often used to remember spelling, but they can be helpful for lists too. They involve taking the first letter of each item in a list and creating

a sentence out of them. Acronyms could be used interchangeably with the word “abbreviation.” Here are a few examples:

Roy G. Biv: Red, orange, yellow, green, blue, indigo, violet

FOMO: Fear of missing out

This one can be particularly fun, and once again, the sentence doesn’t have to make sense to anyone but yourself. As long as it’s something catchy and memorable, it should work well for you!

The beauty of an acronym is that they can be used for spelling, lists, and groups of items. They’re easy, catchy, and short. Add some emotion or humor, and you have an easy-to-remember catchphrase!

Exercise:

To practice your acronym mnemonics, try this exercise:

- Write down some words you have trouble spelling.
- If you have listed items that you refer to often, write these down too.
- On a separate page, write down the first letters of each list item.
- Spend some time coming up with sentences that are quirky and easy to remember.
- Once you have a few, take a break and occupy your mind with something else for a few moments. Make a sandwich, or have a chat with someone.
- When you return, see how much of your rhymes you can remember.
- Repeat, repeat, repeat (until your acronym is memorized).

Practice makes perfect, so keep this up, and you’ll start to see a noticeable improvement in your recall of spelling, list items, and group orders!

Jingles

I love this one, and I find myself gravitating towards it fairly often. Mnemonics Mnewbies should find this one easy and enjoyable to get into it.

Examples:

The Alphabet Song.

Heads and Shoulders, Knees and Toes.

We've all had the experience of having a song stuck in our head. It just keeps popping up, no matter how much we don't want it there. We tend to have an unusually good memory for song lyrics. Perhaps it's the rhythm, perhaps it's the beat, but whatever it is, it can be pretty neat. (See what I did there?)

It's not difficult to slot some different words into a well-known song. Everyone knows the Barney song: "I love you, you love me, we're a happy family." Why not use it to memorize something you need to learn?

One of the great things (or perhaps, terrible things) about this method is that once you get into the swing of it, you'll be reminded of your mnemonic every time you hear the song. This is super for repetition, though it may become somewhat annoying.

Exercise:

If you're one of those people who finds yourself singing in the shower, in the car, or while cooking, the Jingle technique could work for you! Try this:

- Make a note of some things you need to commit to memory and keep it with you.
- Next time you have a song on your mind, pull out your list and see what you can match up!
- Sing the new, mnemonic lyrics until the song disappears from your mind.
- Sing the new lyrics whenever you hear the song on the radio.
- **Tip:** It may be a good idea to do this with songs you dislike, as you may never hear the song the same way again.

Break It Up

Example: Memorize 12741239871133

Split into: 1274, 123, 9871, 133

Notice the pattern in the split: 4 numbers, 3 numbers, 4 numbers, 3 numbers

This technique is particularly useful for memorizing long lists of numbers or items that can be organized into a pattern. It's also often known as chunking.

Think about phone numbers. They have a particular rhythm and pattern to them. This is helpful when it comes to remembering their order. The human brain responds well to patterns (Mattson, 2014).

If you have a long list to memorize, splitting it up into sections can be incredibly helpful. Recalling chunks is easier than a string of information. In the case of numbers, three or four at a time works well for most. Remember, short-term memory can hold around seven items in it at any given time. But splitting a long number into chunks means instead of holding seven numbers in your mind, you can now hold seven “chunks”—which adds up to 20-something numbers.

In order to “chunk” effectively, you’ll need to be able to group things together in ways that are more memorable than average. In the case of numbers, all you may have is the sound and rhythm to go on. For something like a grocery list, this could work even better. Group your items in ways that make sense to you.

Exercise:

Grocery shopping is a fantastic time to practice your chunking. Here’s how to do it:

- Make your list before leaving the house.
- Group your items in chunks of three or four.
- Make sure they have some relevance to each other—for example, by food type, by color, by number of letters, or even by recipe.

Make It Up

Wordsmiths, you may enjoy this one. It’s a little more complex than the previous ones, but it’s enjoyable and memorable, both of which are important for memory recall. This technique involves creating new words out of existing ones.

I’ve found that it works particularly well for remembering names and information of people I’ve just met. As an example, if I had to meet a man named Jeffrey, who was extremely hyperactive, I may end up creating a hybrid of the words “Jeffrey” and “energetic” into “Enerjeffrey.”

A woman named Jennifer who has beautiful, flowing locks may become Jennif-hair. A girl called Zoey who enjoys playing the guitar could turn into Zotar, or Guitoe. In this way, I link the person's name with an important feature and can remember both. It often also inspires a bit of a laugh.

Exercise:

It's not difficult to start creating hybrid memory words of your own.

- Choose two things; a name and a feature, a number and a name, and so on.
- Play around with the two, and see if you can come up with a memorable word.
- If not, see if another word would work.
- Keep playing around with it until you come up with something fun.

Summary

Learning mnemonics isn't as complicated as you may believe. These five techniques prove that implementing mnemonics into everyday life is simple. Day-to-day life is filled with opportunities to practice memory tricks. It's up to you to find the opportunities and take them.

I recommend that Mnemonic Mnewbies try all five of these strategies multiple times until one or two stand out as being more effective.

- Rhymes
- Acronyms
- Jingles
- Break It Up
- Make It Up

It may be tempting to leap ahead to more advanced techniques, especially if you see results quickly. I urge you to spend two to four weeks working on these techniques before moving on, though. These are the foundations of mnemonics, and becoming well acquainted with them will serve you well as you go forward in your memory journey!

Chapter 8: Five Advanced Mnemonic Techniques & Exercises

If you've spent the past few weeks working on your mnemonic techniques, I applaud you. I hope you've seen good results and are ready for some more advanced practices. It's worth bearing in mind that even though you may be moving on to advanced exercises, the basics should never be neglected or forgotten—they are the foundation for building a great memory and should be practiced no matter your memory skill!

- Acrostics
- Memory Palace
- Create an Order
- Rhyme-Keys
- Combination Techniques

Acrostics

An acrostic, while it sounds similar to an acronym, is slightly different. An acrostic can be considered to be almost the *opposite* of an acronym—while an acronym is an abbreviation using the first parts of the words of a sentence, an acrostic is a sentence created out of the first letters of a word or sequence.

Example:

Because: Big elephants can't always understand small elephants.

EGBDF (the treble clef lines): Every good boy deserves fudge.

It's not difficult to create your own sentences for words or sequences you may need help memorizing. The key is to make your sentence:

- Relevant to you
- Interesting and memorable
- Easy to visualize or add other emotion to
- Not too long

If it doesn't make much sense, that's all right. You're likely to be the only one who ever hears it, so the easier it is for you to recall, the better.

Memory Palace

The Memory Palace technique is one of the most popular and effective ways of ingrainings and accessing memories (Qureshi et al., 2014). It's sometimes called the Method of Loci. A very similar alternative is the Journey technique, which relies on the same principles but a slightly different mechanism. This technique relies heavily on visualization and emotion, but if done right, can be the best strategy you ever try.

Here's how it works:

- You select a layout that is easy to memorize. This could be a building, a street, or even just one room.
- Locate several separate, independent locations within your layout. For example, the doorway could be point one. The table in the hallway may be number two. Number three could be the next doorway, leading into the kitchen. Four could be the kitchen table, and so on.
- Commit this to memory, as best you can.
- Once you have your virtual location in your memory, select a list of something you'd like to memorize. This could be a grocery list, a guest list, or even a string of numbers, although the more visual you can make it, the better.
- Now, walk through your Memory Palace, and place a list item at each location point.
- Be creative—if your item is milk and your location is the doorway, imagine a waterfall of milk pouring from the doorframe. If your item is apples, and the location is the bed, imagine a brightly colored blanket with apples on it coming alive as you look at them.

When the time comes to recall your list items, mentally walk through your scene and remember each item as you come to your location points. It may sound overly complicated, but with some practice, this can be not only fun, but highly effective.

This technique can get very in-depth. You can create different memory

palaces for different situations—one for groceries, one for studying, one for keeping track of tasks, and so on. Each time you go grocery shopping, use the same layout, but wipe the items clean and place new ones. When you sit down to study, mentally enter another location, and place the items you need to recall throughout that space.

In this way, you're effectively creating different categories in your mind. It becomes easier to separate information in your mind and enhances your powers of visualization!

Create an Order

If you need to memorize a list that has seemingly no logical order, it's up to you to *create* an order. This works best with things like names and items. It can be difficult with numbers. Let's imagine that you have five tasks to complete in a day.

- Make a doctor's appointment.
- Wash the dishes.
- Take the dog for a haircut.
- Replace a lightbulb.
- Fetch the kids from school.

They may seem like completely random items, but somehow, there's an ordered list to be found in them. There are various ways you could structure your list.

- Alphabetically
- By importance
- By story

Alphabetically may look something like this: dish, doc, dog, kids, light. Importance may be something like: doc, kid, dog, light, dish.

Story would be a more creative way of looking at it, and you may come up with something like: *The child doctor fed the dog a lightbulb on a dish*. It may sound crazy, but it's memorable, easy to visualize, and it covers every item on your list.

While we can all develop super memory, everybody's mind functions

differently! A list that works for you may not be effective for someone else. Stick to what works for you.

Rhyme-Keys

Rhyme-keys is a system of both numbers and words. For each number, choose a word that rhymes, such as:

- One - sun
- Two - goo
- Three - key
- Four - war

Now, you'll assign each of the items you need to remember to a number, i.e., one - bread, two - milk, and so on. The trick is to create mental links between your chosen words and the item on your list.

Number one is easy. Bun equals bread; it's not difficult to imagine that. Two may be more complicated. How does one relate milk to goo? Perhaps a white, milky goo. Create a mental picture that captures your imagination. Three, eggs. Eggs come from hens, and the word "hen" has three letters. Four, shampoo. The double O looks like a pair of glasses, prompting a thought of the phrase or nickname "Four Eyes."

You can associate your numbers and words with your list items in any way that makes sense to you. This technique also requires a bit more imagination, but with some practice this can become a habit that helps you never forget your shopping list again!

Combination Techniques

While all the techniques we've spoken about can be stand-alone tricks, they can also be combined to form even more powerful techniques. You may find that one or two work extremely well for you. If you're interested in trying something a little more complicated but also more powerful, you could mix two (or three) together to form a sort of super technique.

Try mixing an acronym with a jingle for a double-effective memory trick. Maybe hybrid words and rhymes would make a good match. Perhaps the memory palace really works for you, but it helps to pair it with a jingle as you walk through your map.

It's a good idea to learn the basic techniques properly and work with them for a couple of weeks before deciding to try melding two together. Try mixing two techniques together that engage different parts of the brain, such as one visual technique and one auditory technique.

Summary

If you've got a good grip on the more basic techniques, moving up to more advanced memory strategies can help you to keep improving. Some advanced mnemonic techniques include:

- Acrostics
- Memory Palace
- Create an Order
- Rhyme-Keys
- Combination Techniques

Of the 10 techniques we've been through, you should find a few that really engage your memory and help you to remember things you never would have before. Give each one a fair chance and a few weeks, assess what's worked for you and what hasn't.

Don't be afraid to discard a technique if it isn't helpful. Not every trick will work for every person. This memory journey is about you and nobody else. Choose what feels right for you, commit to it, and you'll start to see results!

Chapter 9: Build On Your Success

There's so much more to building a great memory than simply learning a few techniques. It's about making a lifestyle change. Nobody wants to have a superb memory for a few months and then go back to forgetting everything. Once you've started seeing results with your mnemonic techniques, it's in your best interest to set up a support system so that your memory journey ahead can be smooth, easy, and strong.

As mentioned earlier in the book, there are some things you can do to prepare for training your memory. They are:

- Meditation
- Getting into great sleep habits
- Physical exercise
- Family involvement

Those aren't all we can do to give our brain the best chance of learning, though. If you're implementing mnemonics strategies into your life on a daily basis, you're already developing new, healthy habits that will serve your memory well as you go.

Don't Stop Your Development

You're off to the best start you can be if you've implemented mnemonic techniques and are starting to reap the rewards. But if you stop here, you'll never achieve your full potential. Continuous improvement is essential. If you never move on from where you are right now, you're missing out on an amazing memory!

In addition to the preparation activities we've already discussed, here are some more ideas to start building a memory-centric lifestyle.

Build Your Memory Muscles

Just like building your physical muscles requires exercise and time, so too does your memory. You need to keep those memory muscles tough, and here

are small but significant ways you can do that.

Train Daily

Inconsistency is the worst enemy of progress. Training daily is the minimum requirement in order to see startling progress. The exercises outlined in this book will give you a great basis, but if you don't use them *at least* once every day, you may be wasting your time. You can practice these tricks anywhere, any time, no matter who's around you or what you're doing. There's no excuse!

Try one of these quick but effective exercises if you aren't sure exactly what to do:

- Memorize 4 details of people you encounter while out and about (observe now, recall later).
- Try to draw a mental map of where you are and how you get there.

You'll also notice there are other recommendations to gear your lifestyle towards being memory-friendly. Memory is like a puppy, in some ways—it thrives in a happy, healthy environment where it's taken care of, given room to play, and allowed plenty of exercise.

Socialize

This is referenced in many studies regarding Alzheimer's and how to prevent it (Diamant, 2008). Despite being geared towards older persons, it's true for younger people too.

Socializing is something humans are designed to do (Shultz et al., 2011). It provides certain clear benefits, like:

- Increasing empathy (closely linked to memory)
- Exposure to various opinions—increase in intellect
- Opportunity for learning
- Create a support system

Just to clarify—I mean real, face-to-face socialization here. Social media has its place, but there's no substitute for the real thing.

Learn a New Skill or Hobby

Learning new skills stimulates your episodic and procedural memory, strengthening them in the process. Some skills are better than others at

improving memory. Here are some recommended choices:

A musical instrument

Music is a multi-faceted hobby. Not only will you be learning how to move your hands (and perhaps feet) in new ways, you'll possibly have to learn to move them independent of each other. You'll also need to learn how to read music or chords, how to keep timing, how to play with others, and possibly how to recognize notes by ear.

Music is one of those activities that involves more than one sense at a time, which may explain why it's so good for improving memory (Talamini et al., 2017).

A foreign language

Do you remember learning about left- and right-branching language earlier in the book? Learning one that is different from your own could assist with memory consolidation.

It's also the perfect chance to start implementing your new techniques. Don't be afraid to try it and use the techniques in this book to remember words. Association is a great one if you're learning a language that's not too different.

For example, "cat" in Italian is "gatto." You could equate this to a gate, and imagine a ginger sitting on your gate. Then, when you hear the word (in English or Italian) you automatically picture a cat on a gate, and so your mind finds "gatto."

Take a new course

Is there an online course you've had your heart set on? Whether it's business, hobby, or something random, learning something new stimulates the brain and gets neural pathways firing.

The course you pick can be anything. The memorizing ideas in this book will assist you in learning whatever topic you choose, and learning new skills engages different types of memory.

Do something you enjoy

Perhaps you enjoy gaming or movies. The fact that I mentioned how technology has the ability to make your memory worse doesn't mean you

need to abstain from it completely. A game here and there or a movie a couple of times a week is perfectly all right.

At the same time, if there's a hobby you're into that doesn't specifically help the brain improve, you're still welcome to do it. Paintball, as an example. Sometimes, you just need to have an afternoon of good, clean fun instead of working towards something. When you do go back to studying, your mind will thank you for it.

Pay Attention

A simple trick to improving memory on a daily basis is simply paying more attention to what's around you. Have a look now. What do you see? Pick an object, and try to describe it in as much detail as possible.

I can see a pink blanket with small blue and white hearts on it. It also has pictures of clouds on it. I think they were once white, but they're currently yellowish. It looks soft and a little fluffy. I can't smell it from here. I believe it's made from cotton.

That's the level of detail you want, perhaps even more. This exercise engages your imagination and brings you right to the moment.

Pair Meditation and Visualization

Meditation is a fantastic daily activity, and you only need to do it for five minutes at a time for it to have a positive effect (Lam, 2015). If you've been meditating for a while and feel like you're past the "focusing on breathing stage," you can pair meditation with visualization.

Close your eyes, and begin by focusing on your breath. Once you feel you're in a good flow, turn your focus to something very specific. Perhaps you want to memorize those Italian animal words, and you're working on the cat on the gate. Perhaps you just want to recall some old, pleasant memories.

Forgo the GPS

This is a slightly scary one if you're unfamiliar with the place in which you live. But it is a great way to kick your memory into high gear very quickly—things happen out of necessity!

It may be wise to try this with shorter trips at first and graduate to longer ones when you're comfortable.

Test Yourself Semi-Regularly

All your work is for naught if you don't see some improvement. While simply feeling like your memory is getting stronger may be sufficient for some, others will want to track themselves, which could also be motivational.

Repeat the tests done in chapter three whenever you feel like your memory has changed. It's also a great idea to keep a Memory Journal where you can record the changes. This way, you can look back and see how far you've come.

Nutrition & Supplements for Memory Support

Once you've got your meditation down, your mind under control, and your sleeping habits on track, healthy eating is the next object to tackle. You may be wondering how what we eat affects our memory, but it can have a more profound effect than you realize.

Remember, whatever goes in gets metabolized. Nutrients are then spread throughout the body to provide energy. If you're eating healthy, easy-to-process food, your body will have less hard work to metabolize them.

If you're taking in processed foods packed with sugar, unhealthy fat, or other unnatural things, your body won't perform optimally, and neither will your brain.

There are two things you can change in your diet to encourage an increased memory: eat and drink things that promote memory, and take supplements to support a healthy memory.

Foods and Drink That Support a Health Memory

While you don't need to restructure your entire diet just for the sake of your memory, it's helpful to at least try and include the following in your diet.

Green Tea

Studies have proven that this acquired-taste tea can reduce the risk of cognitive decline (Noguchi-Shinohara et al., 2014). As well as reducing risk, it also boosts brain power and working memory (Stephen Daniells, 2012).

Green tea also contains high levels of caffeine, which is a stimulant. This

could provide a short-term boost to the memory. Of course, it's also a wonderful antioxidant.

Walnuts

It's no coincidence these nuts look like small brains. Walnuts contain almost double the amount of antioxidants as other nuts, as well as an omega fatty acid called DHA, which is great for both eye and brain health. They also have the lovely quality of reducing Type 2 diabetes in women.

I recommend choosing plain over salted. Too much salt in one's diet can undo a lot of good, hard work!

Blueberries

These unassuming little berries contain some of the highest antioxidant levels around. They're superb for reducing inflammation and have been proven to assist with memory recall (Krikorian et al., 2010).

Blueberries are also very low in calories and high in delicious factor, so you can have some of these every day.

Fish

Not just any fish—specifically oily fish. These include tuna, salmon, and sardines. These types of fish contain high levels of Omega-3 fatty acids, which have been linked to increased blood flow to the brain, leading to increased cognitive abilities (Amen et al., 2017).

Supplements for Memory Support

Brain supplements are known as nootropics. Sometimes it can be difficult to get all we need for our diet, especially if eating vegan or vegetarian. Nootropics can be bought online as a combined product, or you can just buy the single product at your local pharmacy. Here are some natural nootropics that will elevate your brain.

Fish Oil

As mentioned above, the oil we ingest with oily fish is highly beneficial to us and our brains in particular. If you feel you aren't getting enough in your diet, or your doctor has recommended a supplement, then it's definitely worth trying one.

There are two main Omega-3 fatty acids in fish oil: DHA and EPA. EPA has been known to have mild antidepressant properties (Martins, 2009). DHA is the real winner, though. It has been shown to bolster cognitive ability (Kalmijn et al., 2004).

Caffeine

Ah, morning coffee. Caffeine is a stimulant and works by dilating blood vessels, allowing for better circulation. In the right doses, it can improve not only memory, but mood, decision-making, and alertness (Lieberman et al., 1987).

Two to four cups per day are considered to be the right levels, depending on the amount of caffeine in the brewed drink. 400 milligrams should be the limit, although it does depend on one's tolerance for it. Too much caffeine during the day can lead to restlessness, discomfort, and shallow sleep at night, leaving us feeling worse and more susceptible to memory problems.

If you are considering limiting your intake, remember tea has just as much caffeine in it as coffee, and green tea even more so. For the best night's sleep possible, it's recommended to stop drinking caffeine around four hours before going to bed. If you're looking for a bedtime drink, an herbal tea or hot water with a slice of lemon and some honey are great choices.

S-Adenosyl Methionine (SAME)

This long-named nootropic is a naturally-occurring substance. While it hasn't displayed great results in general trials, it seems to have a positive effect on patients with mild to moderate depression (Di Pierro et al., 2015).

Those memory-trainers who don't suffer from depression, though, are not likely to see an effect with this supplement.

Bacopa Monnieri

Bacopa Monnieri is an herbal medicine and is more closely associated with Ayurvedic practices. Studies have proven it to boost brain function in both healthy-brained individuals and those with cognitive impairment (Kongkeaw et al., 2014).

I'd suggest only taking Bacopa Monnieri if you're serious about supplementation and are patient. It takes four to six weeks of daily use before you start to notice a difference.

Creatine

Creatine is considered a bodybuilding supplement, but when used correctly, it can be beneficial to those on a vegetarian diet. Carnivores get a sufficient amount of creatine from the meat they eat, so there's little to no benefit to them. Vegetarians, however, may start feeling better, showing signs of improved memory, and displaying enhanced cognitive skills (Rae et al., 2003).

I don't recommend a creatine supplement for those who already eat meat. Ingesting too much of it can be as bad as not getting enough.

Acetyl-L-Carnitine

L-carnitine is well-known for its energy regulation properties. It plays a large role in metabolism and how food is converted to energy. While there are no studies showing benefits of young people taking L-carnitine, there has been some success in Alzheimer's patients supplementing with L-carnitine, as far back as the 80s (Bonavita, 1986).

Other Factors That Contribute to Memory

In some cases, factors that are out of our control contribute to the onset of memory loss or memory degradation. If caught early, these factors can be managed while preventing further damage from being done. In some cases, studies suggest that their effects can even be reversed.

Age

It's natural that memory becomes slightly tarnished with age. In most cases, it's not a serious loss of memory, but rather forgetting a name or date and remembering it later on. This kind of memory loss is slight and doesn't happen in day-to-day life, but it does diminish with time.

Medical Conditions

The reality is that an unexpected medical condition could afflict us at any time. Here are some common medical problems that could lead to a memory deficiency:

Alzheimer's

Alzheimer's disease affects working memory and long-term semantic and episodic memory (Jahn, 2013). It's often one of the first signs that something is wrong. Unfortunately, there is little that can be done to halt the progression of Alzheimer's, but some medication can significantly slow the progression of the disease.

Dementia

Many consider dementia and Alzheimer's to be the same thing, but they're not. While Alzheimer's is a specific disease, dementia is an umbrella term for a collection of signs and symptoms that involve cognitive impairment.

Alzheimer's is a *type* of dementia that presents with a set of specific symptoms. A person with Alzheimer's would be considered to have dementia, but not everybody with dementia has Alzheimer's.

Dementia sufferers can struggle with one or more of the following:

- Memory recollection
- Concentration and attention span
- Judgment and reasoning
- Communication and speaking

Stroke

Memory loss can be a result of a stroke. When the brain doesn't get enough oxygen, damage is caused to the areas of the brain that are affected. The damage can manifest in many ways, one of which is memory impairment.

Anxiety and Depression

Anxiety has been linked to a worsening of the working memory in the moment (Lukasik et al., 2019). Some studies have hinted that depression has an effect on the ability to recall new information almost immediately but no long-lasting effect (Kizilbash, 2002).

Injury

A brain injury can be disastrous to memory. According to a 2014 study, anywhere from 54% to 84% of traumatic brain injury (TBI) sufferers have memory problems (Kessler Foundation, 2014). The severity of memory loss varies, but if a TBI occurs, there is a high chance of memory impairment.

Medication

Certain medications can cause memory loss, especially if interacting with others. Be sure to check the side effects and contraindications of medications before taking them—even if they’ve been prescribed by a doctor.

Is There a Downside to Having a Good Memory?

As it turns out, having a superb memory can come with some disadvantages! The pros far outweigh the cons, though, so don’t let these factors dissuade you. There are less fun points to anything worth doing, but if you can deal with these six disadvantages, then you’ll find that improving your memory still has a hugely positive effect on your life.

Of course, that’s not to say that you *will* experience these if you have a great memory. They’re just some possibilities.

1. Remembering bad experiences
2. Expecting others to remember the way you do
3. Constantly being asked to show off memory tricks
4. Relying too heavily on memory
5. Just as susceptible to false memories
6. Remembering unnecessary information

Remembering Bad Experiences

Having a super memory is wonderful when you’re remembering happy occasions—prom night, your wedding day, your kid’s births, or the first time you saw the love of your life. These are the memories we love to recall and spend time with.

But what about that ex who treated you badly? What about the day that someone you love passed away? Or that angry conversation you had with your mother three years ago? Not all memories are fun to recall, and having a good memory can feel like a burden when these memories are brought up.

I’m not talking about post-traumatic stress disorder (PTSD), although this could be a factor for some. Traumatic experiences can play themselves over and over in one’s mind. In severe cases of post-traumatic stress disorder, sensory and episodic memory are engaged, so the person experiencing them feels like they are right back in the same situation. This can happen to anyone, whether they have a good or a bad memory.

I'm talking about the everyday, general life negative moments that happen to us all. Someone with an impressive memory needs to be careful not to treat those around them in a negative way in reaction to old memories instead of what's happening in the present!

Memories of bad experiences can become a problem when they lead to:

- Inability to let go of past experiences
- Negative loop of emotion
- Potential for PTSD

Expecting Others To Remember the Way You Do

The reality is that most people have an average memory and don't use it the way they could! If you've been training your memory for any length of time, chances are your memory is better than most people you know.

If you've been doing it for a while and have an impressive recall of conversations and experiences, you may find it frustrating when others don't remember things quite the way you do—or even at all. Strangely enough, the one thing it can be easy to forget is that not everybody has a memory like you do!

You may bring up experiences in conversation that others have no recollection of. Even worse, fighting with your spouse or partner becomes difficult when you recall things they said or did years ago and they have no recollection of it! This has the potential to become a bigger fight due to frustration, so it's something you should be aware of in a relationship.

Of course, if you're constantly recalling things that nobody else does, it could also lead to you doubting your own memory or past. This has the potential to be quite psychologically damaging, so it's something one should be aware of when training their memory.

This condition could:

- Lead to unhappiness in relationships if issues aren't resolved
- Make you doubt your own memory

Constantly Being Asked To Show Off Memory Tricks

Because others tend to have quite average memories, they may be rather fascinated with yours and your ability to take in long numbers or large

volumes of information and repeat them verbatim. This can lead to you being the center of attention at gatherings, dinners, or even just within a group of friends.

I've known more than one memory whiz who has enjoyed the limelight in the beginning but very quickly became tired of reciting Pi to someone new every other day.

While having a great memory is indeed impressive and should inspire others to train their own, it can start to feel as though you're "the memory guy" or "the girl who remembers everything." It can be easy to lose your identity, especially if your friends make reference to your memory instead of to the much bigger person you are.

The bigger danger here is that constantly being shown off as a party trick can result in the loss of friendships and general unhappiness. Of course, if you enjoy sharing your memory talents with others, then by all means, show them what you can do and encourage them to start training their own memories!

Your newfound prowess could lead to:

- Identity crisis
- Becoming the center of attention
- Friendships breaking down

Just As Susceptible to False Memories

Interestingly, those who have trained their memory and exhibit memory feats that others marvel at are still just as susceptible to false memories as anyone else. A false memory is defined as a fabricated or distorted recollection of an event. More often, these episodes hinge on true memories, but they're distorted or out of context.

It's not completely clear why false memories form, but research has found that they can be "implanted" through suggestion. This doesn't necessarily need to be a researcher sitting behind a glass wall whispering suggestions into your ear or a subliminal message inducing a sudden craving for Coca-Cola. A simple passing comment by a friend or family member can be the start of a false memory that gets stronger as time goes.

I myself have always had a memory of a dog my family had when I was little. I can picture her clearly in the backyard. She was a black Labrador by the

name of Muppet, and she was filled with typical Labbie energy. I have a very clear memory of my parents having to give Muppet away to a family who lived on a bigger property because she was digging up the garden and didn't have enough space to expend her energy.

Only recently, I casually dropped this into conversation with my mother, only to be met with a confused look. It turns out Muppet had been my grandmother's dog when I was an infant, and she was gone long before I was even a toddler. How that turned into the clear memory I have is very unclear!

But it's proof that false memories can arise without us even noticing and take hold and grow, without us ever realizing they aren't true memories. This has nothing to do with how good your memory is!

Relying Too Heavily on Memory

Memory is not perfect, even for those of us who have learned to unlock our hidden mind resources. As illustrated above, regardless of how efficient a memory is, it can betray its owner!

Of course, when one takes on the task of training and improving their own memory, it's because they expect to make use of this new skill. Nobody trains their memory only to go back to their old ways and not make use of it. Powerful memories are meant to be used, and for multiple things:

- Remembering important dates (never miss an anniversary!)
- Remembering appointments
- Never forgetting a name again
- Passing courses and exams with ease
- Not being dependent on your smartphone for contact numbers
- Showing off memory tricks

But there's always a danger of relying too heavily on our memories or becoming complacent. Memory is not infallible! As I've just mentioned, false memories are just as real no matter how good or bad your memory is. What else could befall our memories?

While having an enhanced memory is a great achievement and a wonderful tool, we should still take the necessary actions to record information physically.

Remembering Unnecessary Information

It's great to be able to recall your best friend's phone number, complicated information for the exam you're writing tomorrow, or your grocery list. But what about the phone number of the doctor in the town you used to live in five years ago? Or the address of the institution you studied at a decade ago?

Great memories don't discriminate against information! You may find that once your memory has improved, you remember things that you don't necessarily want to or need to.

This isn't necessarily a problem, though, because the brain has a near-infinite storage capacity. But it can be somewhat annoying to remember things that have no point to them or no use to you!

Summary

Committing to improving your memory is a big step, and if you're serious about it, there are some lifestyle changes you can make to ensure you have the best chance of boosting your memory recall.

- Train daily.
- Socialize.
- Learn a new skill or hobby.
- Play a musical instrument.
- Learn a foreign language.
- Take a new course.
- Do something you enjoy.
- Pay attention.
- Pair meditation and visualization.
- Forgo the GPS.
- Test yourself semi-regularly.
- Eat memory-supporting foods.
- Supplement with a memory-fortifying nootropic.

Other factors that could play a role in memory and memory impairment include:

- Age
- Medical conditions

- Injury
- Medications

Lifestyle changes don't need to be drastic. Begin to implement a few changes here and there, and soon you'll start to see the difference.

There could be some disadvantages to having a great memory, but the pros far outweigh the cons! If you start taking steps today, you can expect to see improvements in as short a time as a few weeks. Step by step!

Chapter 10: Your Personal Memory Development

Plan

Memory development is different for everyone. Your brain is not the same as mine, and mine is not the same as my brother's. We're all a product of our upbringing, our experiences, and our personalities. We all experience memory differently, even though it's the same process.

That's why a Personal Memory Development Plan won't necessarily be one-size-fits-all. It will, to a certain degree, be molded to suit you and your memory. Some elements of a Memory Development Plan will be quite similar no matter who it's for. Things like a healthy sleeping schedule, healthy diet, and practicing daily are non-negotiable if you want to see results. But the techniques you use, your timing, and the people you involve in the process will all be unique to you and your situation.

An effective Personal Memory Development Plan will include:

- Healthy meal plan
- Sleep schedule
- Daily memory practice
- Daily exercise
- Regular testing

If one of these suffers, your whole journey will stall, or, if it's bad enough, take a step backwards. Remember, we need to be balanced physically, mentally, emotionally, and spiritually. That's what this Personal Development Plan aims for. The above five factors need to be incorporated into a plan and are non-negotiable if you want to see progress. Other elements are optional and may enhance the experience, such as:

- Meditation
- Supplement with a nootropic
- Getting family involved
- Getting an accountability buddy

I suggest creating a daily or weekly plan to follow. I follow a weekly schedule and make sure to incorporate some form of exercise and meditation

every day, eat two to three healthy meals, and get to sleep at a decent time (and make sure it's not interrupted).

I also practice my memory techniques every day. Some days it's simply a couple of memorizing exercises while I'm waiting in the line at the bank. Other days, I spend hours on counting and memorizing cards. It depends on the day, and that's how your schedule should be too. Make sure you're incorporating the most important things that will set you up for success.

Useful Techniques & Hacks

Life hacks are some of my favorite things, and if they assist with memory, even better. I use these extensively in my own daily life, and I've found value in each one.

Rule of Five

This is a highly useful recollection technique that I recommend using every single day. The idea is to review the info you've memorized five times for it to set in.

- 1st review: Immediately
- 2nd review: After 24 hours
- 3rd review: After 1 week
- 4th review: After 1 month
- 5th review: After 3 months

It's *crucial* that you put this on your schedule. Although your memory is now better than it was, I learned the hard way and missed out on progress! I plan weekly, but keep a monthly and yearly planner too, which I review the weekend before each week so that I'm forewarned of how my week will look.

Stepping Stones

Similar to "chunking," I advise breaking your goals up into smaller pieces in order to reach them more easily. Just as it's easier to memorize in small

segments, so it's easier to move forward that way.

Keep a record of your goals. Break them down as much as they can go; for example, if my goal was to own a Starbucks, I could hardly just walk in and buy a franchise. That's no reason for me to get despondent, though. All I need to do is split that goal into several smaller, more achievable ones. Perhaps I sell lemonade for a year while saving up. My next goal could be to get a job at Starbucks. It would be a step closer to my dream. From there, my next stepping stone would be a promotion. Eventually, I might make it to manager. With my savings and my position, I have a much higher chance of reaching my goal.

Reward Yourself

Those stepping stones? Reward yourself when you reach them, even if it's just a little win. Victory is victory, no matter how small.

If you can get your spouse or partner in on this, you can create a reward system. Ask them to keep/hide a few of your favorite treats, and share your goals with them. Allocate a treat to each goal, and when you reach it, you get the treat! Sounds simple, but it can be superb motivation. This method of getting your people involved adds a nice element of accountability, too.

If you want an extra challenge, get a couple of special treats. If you achieve your goal before the set date, a special treat is yours! Remember, though—your partner needs to be able to see that you've met your goal. No secrets!

Timing

Timing is a very deliberate hack in this case. I've found that I have the most success when I plan my day meticulously, from mealtimes to five-minute slots where I stand up and stretch. It's difficult at first, but once you become accustomed to it, it becomes simple. This is another case where the schedule comes in extremely handy.

If I know I need to be up at 7am tomorrow, snooze my alarm twice, shower, and be ready for breakfast at 8, my day starts off under my control. I can then meditate and practice my daily memory in peace, and then my day is ahead.

I believe if you're going to schedule, do it properly!

Create a Support System

This tip is so big it requires a whole section for itself. Surrounding yourself with supportive people is essential and can make or break your memory ability far more easily than you realize.

Why? A supportive bunch of people around is more than just a cheering-up on a cloudy day.

- They motivate and encourage one to do better.
- Group mentality multiplies confidence.
- You have a space you can be yourself.
- They can answer questions you may have.
- You can keep each other strong when struggling.
- Everyone needs a brainstorming/accountability buddy!

Like-Minded People

Nothing motivates like a group of determined people who are on the same path as you are! Loneliness is not conducive to a great memory, so it's important to have people around you who support and build you up.

Like-minded people could refer to those you can relate to in a moral or ethical sense or those with whom you share a common interest. In this case, I suggest you find others who enjoy memory as much as you do.

- Clubs or groups nearby
- Social media (Facebook groups, Instagram, etc.)
- Online groups or websites

Family

I'm lucky enough to have a supportive family, and I hope you are too. Whether this is your parents, your spouse, your partner, your kids, the dogs, cats, fish, or extended family, let them know what you're doing so they can

support you. Family support is a different kind of support from that of friends, and it's a key component of that balance of physical, mental, emotional, and spiritual.

Get them involved. People like to be needed or wanted, so let them become passengers on your memory journey. Ask someone to do the tray test with you. Someone else can be the treat-dispenser when you hit one of your milestones. Let another family member become an accountability partner. Family is usually honest!

Whoever you bring into your memory journey, it's worthwhile suggesting they start on their own.

Friends

We all have those people we love, who never fail to cheer us up. They're a critical part of the support system and play just as important a role as family. This will most likely be your safe space, where you can relax into yourself and not have to try not to swear in front of your mother.

If you can, get a friend to start a Personal Memory Development Plan with you. It's helpful to have someone to talk to about memory, exercise, healthy meals, and to get excited about your progress with!

Your Development Plan Checklist

You'll create your own checklist/planner when you're finished with this book, in whatever design or layout suits you. You can design it to include whatever information you'd like to have on it. Maybe it would benefit you to include a section for water intake. Perhaps you want to be able to jot down the weather on a day. Your checklist is *yours*.

That said, here are some ideas to get you started. I like to keep a daily, weekly, and monthly checklist, as well as my daily, weekly, monthly, and 3-monthly goals that I aim to hit.

Daily Checklist

All those important facets of a memory-promoting life will be on this checklist, from food to sleep. I plan my day in 30-minute slots, so it's easy for me to see at a glance what I should be doing and if I've hit my daily goals.

I also include check marks next to each daily goal (meditated, memory tested, ate healthy, got to sleep on time, and so on). I use plenty of color in my daily checklist, which is another memory trick I'll mention soon!

- Healthy meal plan
- Sleep schedule
- Daily memory practice
- Daily exercise
- Regular testing

Goals and Milestones

It's imperative that you set goals for yourself on this journey. The brain gets lazy and tries to find the shortest route to do what it has to do. You'll need to take care to keep it on the right track!

Goals are an important part of the process. This is how you track progress and make sure you're actually learning. The process will be hard. You will be challenged. But your goals become the beacon that keeps you focused and pushing forward.

Milestones are those little stepping stones along the way to reaching your goal. They're every bit as important as the end goal, as they're a literal sign of the progress you're making. Perhaps a milestone would be to memorize 10 objects on the tray test. Once you've hit that, it's time for celebration! And then on to the next.

Each milestone you surpass takes you one step closer to your end goal. Reward yourself for every one; after all, you're so much further ahead than you were when you began reading.

Accountability

Science has suggested that sharing your goals with the people you love can

increase your chances of reaching that goal quite drastically. A study has revealed that performance increases when we share our goal with someone we believe to be of higher status than we are (Ohio State University, 2019).

We can get far with goals. But if we don't have accountability, it's going to take us longer to get there. Just that feeling of letting someone down, of breaking a promise, can be the push we need to make that final sprint.

Accountability is not a passive thing. You may ask your father or mother to be your accountability partner, but that doesn't mean they get to sit on the sidelines and watch and cheer. It means they need to be asking you if you've done your memory practice today. They should be checking in with you to see how far you are along the road to your goal. They're the ones who should be hiding that "milestone treat" of yours!

Goals can get you only so far. Paired with accountability, though, you can achieve great things.

Challenge Yourself

Meeting a milestone is a super feeling. It's an automatic boost of confidence, energy, and pride that we're completely entitled to. You deserve the treat you've worked hard for! But milestones should always come with one thought in mind: What's next?

Memory is something you'll have with you forever. It needs to be trained, like a muscle, and it can continue to improve the longer you feed it. But if you truly want to shine, there's no such thing as complacency. You need to be challenging yourself always.

It doesn't matter if you got this book yesterday or you're a 20-year memory veteran. Challenging yourself is essential. Without it, we wither and lose interest, and what life is that? If you're a Mnemonics Mnewbie, milestones are equally as important to you as they are to the memory man of 20 years.

Milestones are tangible markers on the roadside of your journey. They're something for you to look back on and be proud of, but there's also an open road to look forward to. Challenge yourself always. What's next?

Summary

Creating your own Personal Memory Development Plan is key to staying on the straight and narrow. Using a combination of hacks and tricks for motivation, the support of those around you, and your own motivations to meet and exceed your goals, you should have a blueprint for memory success, that includes:

- Goals and milestones
- Accountability
- Challenging yourself
- What Next?

The memory never rests! If you want to be great, you need to keep challenging yourself to be better than you are right now. Not better than anyone else, but better than the person you were before.

Challenge yourself to stick to your Personal Memory Development Plan for six months, and see the difference!

Chapter 11: Remembering What We've Learned

We're reaching the end of the book, and you should be brimming with new knowledge of how to train, exercise, and effectively play with your memory. It's been a journey in itself! You now understand the process of memory, mnemonic techniques, hacks and tips, and the importance of goal setting and accountability.

It's time to go back to the questions I asked you to answer at the beginning of the book. Remembering what they were should be easier than before! Here are some of them once again, and I'd like you to answer them from your point of view now.

1. How important is developing your memory to you?
2. What impact would/has your new superhuman memory have/had on your life?
3. What do you want to achieve by enhancing your memory?
4. How would you rate your current memory? (Poor, Okay, Good, or Excellent)
5. How long did it take to see an improvement in your memory?

Why Is This Important to You?

You should be able to see a noticeable difference in your answers now versus what they were before. Have your feelings about memory and your own ability changed since you started reading?

Now that you've had a taste of how to improve your memory, you may be getting a tiny idea of how important memory can be. When looking back on your answer about why enhancing your memory was important to you, has your view changed? Are your reasons for wanting to improve it still the same, or have they shifted as your memory has shifted?

If you've been through this whole book, you'll understand the implications that memory can have. New doors are being opened for you as we speak.

How will you use your new memory going forward?

What Was the Most Important & Interesting to You?

There's a lot of information in this book that you may never have come across before. I hope it's been informative and interesting, but not overwhelming to you. I am of the opinion that learning the process behind memory can make a difference to the way we perceive our own memories being created. Having knowledge of the fact that memories have a better chance of becoming long-term ones if we actively pay attention to them in the moment can make a huge difference.

But you're the reader, and chances are one or two stood out to you more than others in this book. What do you consider to be the most important part of what you've read, and why?

What Will You Take Away?

All too often, books are read and forgotten. I expect, now that your memory has improved, you'll remember these techniques for a long time to come!

Going back to when you started reading this book, what's changed since you began? (besides your memory) How has this knowledge changed your life? And, perhaps most importantly, what will you do with it?

The knowledge you now hold of how to access your hidden inner power could be life-changing. You could use it to do party tricks because there's a definite place for that. But you could also use it to make a difference, both in your own life and in the lives of others.

With great memory comes great responsibility!

Bonus Chapter: Seven Secret Memory Hacks!

I hope that you've discovered some of the enjoyment involved in improving your memory! Once I began to learn, I never looked back, and I still use these techniques on a daily basis. I hope you've found the strategies we've spoken about useful and that you're incorporating them into your own life already.

I've got a few more sneaky memory hacks to share with you that will give your mind a little boost and will most likely be fun too.

- Music As a Tool
- Study the Colors
- Play Chess or Cards Fast
- Remember Names and Faces
- Public Speeches Strategy
- Foreign Languages and Physical Exercise
- Mind-Mapping

Musical Notation As a Tool

There are various musical mnemonics that musicians can use to memorize musical notation. Because music is generally a very long thing to try and memorize, it can be a challenge to mnemonic mnewbies to apply their new skills to it.

Here are some mnemonic tips and tricks that apply to learning music, as well as how to incorporate music into your other mnemonic techniques for use in everyday life.

Memorizing Music

Musicians may not have super memories, but they do seem to have a better innate ability to access memory on the go. Muscle memory may play a part in this, but again, that comes down to the knowledge of their music being entrenched in their memory.

If you're struggling to remember which space is what and which line equals

which note, mnemonics can be of huge help.

Musical Mnemonics

Music encompasses three senses, and we can use this knowledge to create more in-depth mnemonics.

- Auditory
- Visual
- Motor

We hear, see, and feel when playing music. We look at the notes or the way our hands move. We hear each note separately, as well as the full piece. Motor is our muscle memory, the way we move to play the piece.

Mnemonics are infinitely more powerful when layered. The unique three-layered quality of music makes it unusual and fun to add mnemonics to! Association has never been so easy. You can match a sound, a movement, and a visual to create one small memory chunk.

Chunking

If you struggle to remember the order of your musical piece, the Chunking technique could work really well for you. Add your “chunks” to a Memory Palace, and you should find it far easier to “walk through” your musical piece with ease.

Rule of Five

As I mentioned earlier, come back to your music in a pattern to ensure it's in your memory and can be easily retrieved. For example, if you learn a piece today, review it again immediately. Then go back to it tomorrow, and then in one week's time. Lastly, do revisions at one month and three months.

Music Itself As a Tool

In keeping with the idea that the senses are important to mnemonics and layering is important, music can be used as part of mnemonics to make them more powerful. Already rhymes and jingles incorporate it, so why not add it to the rest where you can?

If you're meeting someone for the first time and their phone rings, you could

add that song to your mnemonic of their name and face. Creating a mnemonic for your wedding anniversary may be easier if you associate it with the song of your first dance.

Study the Colors

Look around you right now. What colors can you see? Can you point out an example of each color of the rainbow? What's your favorite color that you can see right now? What's the one you like the least? Colors are all around us in many different shades and hues, and we can use them to help us remember.

If you had to look out your window right now and see a lime green bird sitting in a tree that has neon pink leaves, that would catch your eye. You wouldn't forget that image any time soon. There's nothing unusual about a bird sitting in a tree; it's the colors that were noticeable.

The Psychology of Color

Color is an electromagnetic frequency. It's energy. With that in mind, it's easier to understand how colors can affect the brain. Electromagnetic frequencies can alter biochemical reactions in the brain, which is evident in the fact that infrared light and ultraviolet light are used in medicine. Of course, while those are concentrated, powerful forms of light, even the lower energetic frequency that colors give off have an effect on our brains every day.

Using the right color in the right place can have a huge impact on our memory retention and potential for learning (Dzulkifli & Mustafar, 2013). Psychology suggests that colors are associated with particular feelings or states of mind, both positive and negative.

- **Green:** calm, concentration, nature/envy, illness
- **Orange:** joy, mood improvement, boldness/arrogance, obnoxiousness
- **Blue:** calm, productivity, peace (light blue)/shyness, impatience
- **Red:** passion, determination, love/anger, harshness
- **Yellow:** happiness, summer, fun/cowardice
- **Purple:** royalty, funkiness/mourning

- **Gold/Silver:** royalty, honor

What Do Colors Mean to You?

The above color guides are just that—a guide. How you use colors in your memory practice will depend very much on your personal views and the feeling that each color brings you. For one person, red may be indicative of romance and love and make them think of Valentine's Day and roses. For another, it may bring to mind harsh anger and blood. Color association is a very personal thing!

Adding Color to Visualizations

Using color can supercharge your visualizations or mind-mapping, which I'll discuss later. Pair someone you know to be an angry person with the color red, and you'll find it easier to call their name or phone number to mind. Assign the color green to a memory that relates to the outdoors.

You can also create color pairs for things in real life and not just your emotional association. Pair your wedding anniversary with the colors of your wedding. Link a person to the color of their car. This trick can be used in almost endless ways to add an extra layer to your visualizations and memory!

How To Play Chess or Cards Fast

Chess and cards are both games that can be played to while away the hours. But the modern world is all about speed, and so both of these have developed new variations that are much faster. It's been said that chess players have extraordinary memories and can remember countless board positions and how to respond to them for the best outcome. This is similar to the Chunking technique.

Chess is a pattern-intensive game. There are only so many moves and so many outcomes. It's so pattern-centric that blindfolded chess has even become a thing. You'll see only your own or your opponent's pieces and have to remember one side's moves in your mind.

Chunking or Memory Palace

If you can memorize chess board positions and responses, imagine how easy it would be to make moves without even thinking? Use the Chunking technique to learn moves and responses. You can also use the Memory Palace or journey-type system to “walk yourself through” games as they’re going. The same can be done when playing cards.

Bear in mind that applying these techniques to chess or cards is a bit more complicated than using them to remember your grocery list. I recommend practicing on the lists a bit before getting into this, unless you happen to be great at chess or cards! Having a love for the game will definitely help, but if you aren’t much of a chess player from the start, you may find yourself becoming frustrated quickly.

How to Easily Remember Names & Faces

How many times are you introduced to somebody new and spend a few moments in conversation before walking away and completely forgetting their name? It’s a common occurrence. Chances are, by the end of the day, you won’t remember their face either. This can be a bigger problem in the business world, if you’re constantly meeting new clients.

Remembering Names

Improving your memory will definitely help. But in many cases, it’s simply that we aren’t focused. Ron White, the 2009 and 2010 USA Memory Championship winner said: “A major reason you don’t recall names is you weren’t listening. Someone says their name and two seconds later you don’t know it. This is not a memory problem. It is a focus problem.” He’s right! The first simple trick to remembering names is to pay attention. If you’re training your memory, paying more attention to this fact should trigger an “Oh, this is important” response and file it away where it can be recalled.

Remembering Faces

Again, focus can make all the difference. Refer back to the mnemonic technique Make It Up, where a person's name and a prominent feature are mixed to create one word. When someone is introduced to you, pay attention to their name and immediately choose a recognizable feature and create their mnemonic name.

If you struggle to create new words, simply link their name with something familiar to you and create an image. For example, if you need to remember Doug, you could associate him with the word "dug." Picture him with a spade sticking out of his head. The more memorable, the better.

Quick Tips:

- Greet by name after being introduced and repeat the name when saying goodbye.
- Ask how a name is spelled if you need an extra bit of repetition.

Public Speeches Strategy

Fear of public speaking is one of the most common phobias, with up to 25% of people reporting it (Furmark et al., 1999). Luckily, improving your memory can make a huge difference when you have to stand up in front of a crowd and speak.

If you can commit your speech to memory, there's no need for notes, flash cards, or other fiddly things that could be distracting and make you more nervous.

Why Does It Scare Us?

We are sophisticated machines, and the masterpiece that the human body is can never be understated. But sometimes, when faced with a perceived threat, our systems crash and our ancient, caveman fight-or-flight instinct takes over.

Yes, a crowd is seen as a threat!

When our fight-or-flight system is activated, it comes with certain physical changes. Heart rate and breathing rate increase. Shallower breathing means there is less oxygen reaching the brain, which makes decision-making harder and fear easier. Blood rushes to the extremities, in preparation to either run or fight. Our body temperature rises, which can lead to the dreaded perspiration patches. All of this just makes us feel more and more terrified because now our body and brain are working together to prepare for some sort of threat.

The Solution

There's no need for speech cards or stacks of paper. All you need is your own memory. The Memory Palace technique is wonderful when applied to speeches. You can finally use your visualization skills for something other than imagining people naked during public speaking!

Write your speech out and split it into easily manageable chunks. Each paragraph should have a main point or theme to it that will make it easier to display in your Memory Palace. Once you have your chunks, it's time to start placing them in position.

- Create your Memory Palace in a different place to where you usually would (but still somewhere that is familiar to you).
- Based on how many paragraph chunks you have, walk through your Palace and set your locations.
- Now, you'll need to create a visualization for each chunk of your speech.
- Once you have your images, walk through your Memory Palace and place one at each location.

I advise creating your Palace well in advance, so you can rehearse your speech beforehand using nothing but your memory. This way, you'll become accustomed to walking through the Palace and bringing to memory each visualization at each location.

Even if you don't do much public speaking, this could be a good thing to practice in case you do need to do a speech in the future. Remember, you can create different Memory Palaces for different situations, such as a grocery list Palace, a guest list Palace, and so on. Simply choose another location and set

up a Speech Palace.

Foreign Languages and Physical Exercise

If you're attempting to learn a foreign language, well done. It's not an easy feat (for most of us), but I can guarantee mnemonics will be helpful! Another trick I've learned is to pair your language learning with exercise to increase memory retention.

Remember, exercise is one of the things you should be doing daily in order to get your mind and body in prime condition for memory work. So, given that you'll be exercising anyway, why not use that time to get two things done at once and practice your language learning at the same time?

There have been many studies suggesting that language learners retain memory better when doing some physical activity at the time of learning (Liu et al., 2017). Exercise increases heart rate, which pumps blood to the brain, saturating it with oxygen. You could wait until after your workout to do your language learning, but then you'll miss some of the benefit, and anyway, why wait when technology allows us to learn on-the-go?

This is the perfect opportunity to do some multitasking! So, what are the advantages of pairing language learning with physical exercise?

- Get two of your mind-prepping tasks done in one go.
- Exercise improves memory, so your learning may be more effective.
- Improves multitasking skills
- Takes advantage of the brain's oxygenated state
- Saves time!

Remember left-branching and right-branching languages? If you're keen to learn a new one that will have a great impact on your memory, consider going for one opposite to what you currently speak. Kill three birds with one stone, not just two! (No birds were harmed in the writing of this book.)

Not sure how to mix the two? Here are some ideas:

- Listen to music in your target language while training.
- Listen to a foreign language podcast.
- Play YouTube videos.

- Work out with a foreign buddy and only speak their language!

Mind-Mapping

This was my go-to study method when I was in school. I love the creativity of it. Mind maps have been around since the 60s, created by memory legend Tony Buzan. They're all about connectedness, which is an important concept in memory training.

Mind maps engage the brain differently from how a page filled with text would. They're organized like the brain itself is, so it's not difficult to have a glance at one and understand it. But the real strength of a mind map, and the benefit you'll get out of it, is in the creating.

What Are They?

A mind map is, at its simplest, a diagram. It begins with a core subject; let's choose memory as our topic, of course. The main subject gets the place of honor in the center of the page. From there, sub-topics are branched out and expanded upon. From those sub-topics, more areas can be extended. The mind map is an example of what's called radial thinking, as opposed to what the page of text is (lateral thinking).

Why Are They Great for Memory?

Mind maps mimic the way the brain thinks. Everything is connected! Also, the visual aspect of it makes a huge difference to how it's recorded and stored. The brain is, primarily, a visual machine. The act of writing information and seeing the same information in bright color with a creative doodle is the stuff memories are made of.

- Creative outlet
- Writing down helps memory—combination of sight and action
- Can fit plenty of info onto one small space
- Makes use of imagination!
- Practices organization

How To Mind Map

It may seem intimidating the first time you sit down to mind map, but it's a simple process. You'll need:

- A sheet of paper
- Colored pens, pencils, or markers

If you can, set aside around 30 minutes for this exercise. It's easier to do in one sitting so you don't have a break in concentration and have to pick up again later.

1. Write your main subject or keyword in the middle of the page (memory). Adding an image is a great idea, if you can.
2. Choose a different color, and draw a thick branch off of your main subject. Label this with a secondary keyword (long-term).
3. Do this with as many secondary keywords as you have (iconic, short-term, working).

Are you starting to see the pattern? Our main topic in the center now has four branches coming off of it, and we can go and expand upon each branch separately.

4. From the long-term memory branch, we can add three more expansion branches: procedural, semantic, and episodic.
5. On each of these little branches, draw, write keywords, or use symbols to explain what they are.

An Effective Mind Map:

- Uses bright colors symbolically
- Adds relevant doodles
- Creates links via branches, arrows, etc.

Remember Passwords Easily

As much as you can always write down a phone number or a grocery list if necessary, nobody really wants to leave their password lying around on a piece of paper. Try this hack to remember passwords easily and not have to keep clicking that “Forget Password” button.

Password System

The trick here is to come up with one “master password.” Here’s how it works. Choose a base password, something that you won’t have any trouble remembering. You’ll use this base keyword on every site, in every password. But for each separate site, create a second half to your password that is unique to that site. Remember to use capital letters, symbols, and digits!

For example, my base password will be “Memory.”

- My email password may be something like MemoryGmail08.
- My Facebook password would be MemoryFB08.
- Twitter may be MemoryTweet_08.

Do you see the pattern? They don’t need to be exactly the same structure, but something as simple as having a base password that changes slightly for each site could save you a lot of hassle!

Teach What You Know

Once you’ve learned mnemonics and seen the effect it has on your life, why not share that with someone else? Or with a group of people. A fantastic way to ingrain information into your own memory is to teach it to others. Not only will you boost your own memory, but you’ll be sharing some of the most interesting, exciting, and easy-to-implement information with others!

Here’s why teaching is such a great memory-consolidating exercise:

- It comprises visual, auditory, and mental activity.
- Teaching cements understanding.
- It increases confidence.

The Protégé Effect

This method is known as the Protégé Effect. It states, basically, that when you explain something to someone else, it helps you to understand it better. This is a fairly layered technique. The preparation for teaching is a way of learning in itself, and the act of teaching builds upon that. Answering questions that arise can also help one view the subject from a different perspective, enhancing knowledge.

The other advantage of teaching what you know to others is that it builds socio-emotional skills.

Memorize Long Numbers

For phone numbers, WiFi passwords, or passcodes, using a number-to-word technique can make your life easier. There are various well-known techniques that use this methodology, such as the Red Table or the Major system.

The principle is simple: convert single digits to consonants, and add vowels in between to create words. For extremely long numbers, you can create a string of words in a sentence or, even better, create a visual image out of your words.

Your number-word switch follows this kind of pattern:

0 - s, z, x, soft c

1 - t, d

2 - n, ng, n before k, hard c, q, hard g or x

3 - m

4 - r, l

5 - l

6 - ch, j, soft g, sh, c (as in cello), cz (in Czech), s (in tissue and vision), sc (in fascist), sch (in schwa and eschew), t (in ration and equation), tsch (in putsch), z (in seizure)

7 - k, hard c, hard g , q, ch (in loch)

8 - f, ph (in phone), v, gh (in laugh)

9 - p, b

This may look confusing, but here's how it works. Choose a number—for example, let's go with the first few digits of Pi: 3.1415927.

Switch the numbers out with letters, and you get this: /m/-/t/-/r/t/-/l/p/-/η/-/k/. Now, we create words from these letters: meteor, tail, pink.

You can choose to remember those three words and revert them back to numbers, or you can picture a pink-tailed meteor when remembering Pi (*Mnemonic Major System* , 2020).

The beauty of this system is that you can create your own based on what works for you! It may take a while to get used to this, but once it's in your mind, you can't go wrong with it.

Please try these memory tricks and hacks at home! They're not only easy, but they're also a whole lot of fun to practice. Get your friends and family involved and challenge each other.

Mnemonics is a skill that can be acquired by absolutely anyone. All that's needed in order to start is the will to improve your memory and the dedication to see the journey through. With enjoyable activities like these, the process can add an element of recreation and fun to your every day. Building your memory doesn't have to be a cumbersome process! These tricks prove that.

Conclusion

I must congratulate you for getting this far on your mnemonics journey. It's an extremely rewarding journey. And I'm sure you'll agree it can be a challenging and frustrating one too.

By now, you should have personally experienced both some memory victories and some frustrations. Improving your memory is like a relationship. It needs constant working on, but if you put in the effort, it could be the most exciting roller coaster you've ever been on!

Just because the book is ending doesn't mean your memory exercises should. From here, you go it alone (hopefully with a support system), but the book is always here to refer to, like a trusty friend when you need advice or inspiration.

Mnemonic Blueprint

I designed this book to be both your Memory Guide and your Mnemonics reference. Understanding the amazing process that goes on inside your brain every single moment should give you not only a kind of awe at your own ability, but it should also help you realize that you have these powerful resources at your disposal, just waiting for you to actually take hold of them and start using them in your life.

Memory Mechanics

Let's do a quick recap of this superhuman ability you have.

- Iconic memory is a fleeting impression.
- Short-term memory is where the brain decides if information is important or not.
- Working memory is where the brain holds information that's important for the task it's busy with.
- Long-term memory is where memories become ingrained.

Imagination Is the Key

Imagination isn't reserved for children! This is me giving you full permission to unleash your inner kid and let your imagination run wild. Mnemonics and imagination are good friends, and pairing them together will make your mnemonics not only much easier, but also more fun.

Mnemonics isn't a dry, difficult subject. It's entertaining, enjoyable, and sometimes a little tongue-in-cheek. Develop your imagination, and your mnemonics will take on a whole new slant. Improve your memory, and your imagination will get stronger. It's two-for-one!

Mnemonics Quick List

- Rhymes
- Acronyms
- Jingles
- Break It Up
- Make It Up
- Acrostics
- Memory Palace
- Create an Order
- Rhyme-Keys
- Combination Techniques

Memory Preparation

There are no prior requirements to starting a memory improvement program. You can begin wherever you are, whatever your circumstances. Mnemonics is for everybody.

But if you wish to see roaring success and keep astounding yourself with your own memory feats, you can set your life up in such a way that you prime your brain to be in the best condition for amazing recall.

If you can, and if you're willing to, incorporate these into your daily life:

- Short meditation

- Healthy diet
- Daily physical exercise
- A healthy sleep schedule
- Daily memory training

Why a Good Memory Is Important to You

Any work you do on building up a fantastic memory will be twice as effective if your motivation is strong. Keep in mind why you're doing this and what it will mean to you to have a better memory.

If there's one thing you should be committing to memory before you even begin is why this journey is important to you. Every person reading this will have different motivations. Perhaps you want to be the best person you can be. Maybe you want to gain the competitive edge in the workplace. It could be that you're just conscious of the fact that your memory isn't what it should be and that's frustrating.

To have the best success you can, I ask you to write down why this is important to you and keep it somewhere you can see it on a daily basis. Putting your memory goals on paper and keeping them visible is also a great idea. These two play off of each other and encourage each other, and they're the two things you will need to keep referring back to as you move forward and make progress.

Your goals and milestones will change, and it's entirely possible that your motivation will too. As Simon Sinek so rightly said, "Finding WHY is a process of discovery, not invention." Your Why may change, but it's the light that will guide you through the journey when you start to feel tired or defeated. Keep your Why in mind!

Build A Habit

If you're still not sure if you can truly have a fantastic memory, why not commit to trying out these techniques for 21 days? In my first book, *21-Day Habit Improvement Workbook: Coaching Behavior and Motivation Change by the Special Forces Method of Training*, I discuss and share with you 21

top habits that have helped me to get where I am today.

These habits and hacks are taught to elite military personnel, so they're not just fluff. As a barely motivated 18-year-old who wasn't interested in much, I first encountered them when I enlisted, and they changed my life.

As much as I'd love for you to delve into the depths of my first book as well as this one, the only reason I mention it is to highlight the importance of **habits**. There's a common belief that it takes 21 days to build a habit, so if you're unsure of whether or not mnemonics can help you, the best way is to actually give it a try.

Take 21 days and *really* put effort into it. Build a memory palace. Actively work on the tips and techniques in this book. Throw yourself into it, and reassess on day 22. If by then you decide it's not for you, well, you've given it a good try. But if, as I suspect, you've had positive results, then you're off the best habit-building, memory-improving start you could possibly be.

Your Mnemonic Journey

Armed with the techniques in this book and your own Personal Memory Development Plan, you have a Mnemonic Blueprint that, if followed and practiced, can be your guide to enormous memory success!

Khalil Gibran said, "Forgetfulness is a kind of freedom." He's right in one way. But so is remembering. Can you picture your life in five years? 10 years? How will having a great memory change it, improve it?

Memory is always with you. It's part of everything you do and everywhere you go. Your unique set of memories is a large part of what makes you who you are. I hope this book has given you an understanding of not only the mechanics of memory, but also of how radically different life could be with just a little memory work. I also hope you've begun seeing results already because these techniques can work for anyone, anywhere.

There's never a better time to start building up your memory than now. You've made a strong start on your journey, and I encourage you to continue. Cultivate a daily memory habit, and see how your life takes off.

A good memory is the best gift you can give yourself, and now is the perfect

time to give it.

We've come to the end of our ride together, but I hope you will take this book and its tips and tricks with you into everyday life. You have an astounding capacity for greatness, and memory is just one small part of that. But my wish for you is to go into your world empowered, knowing that within you lies the greatest ability you could imagine—and it's at the tip of your fingertips right now.

References

- Abraham, A., & Bubic, A. (2015). Semantic memory as the root of imagination. *Frontiers in Psychology* , 6 .
<https://doi.org/10.3389/fpsyg.2015.00325>
- Albert, R. S. (1996). Some reasons why childhood creativity often fails to make it past puberty into the real world. *New Directions for Child and Adolescent Development* , 1996 (72), 43–56.
<https://doi.org/10.1002/cd.23219967205>
- Almaraz-Espinoza, A., & Grider, M. H. (2020). *Physiology, Long Term Memory* . PubMed; StatPearls Publishing.
<https://www.ncbi.nlm.nih.gov/books/NBK549791/>
- Amen, D. G., Harris, W. S., Kidd, P. M., Meysami, S., & Raji, C. A. (2017). Quantitative Erythrocyte Omega-3 EPA Plus DHA Levels are Related to Higher Regional Cerebral Blood Flow on Brain SPECT. *Journal of Alzheimer's Disease: JAD* , 58 (4), 1189–1199.
<https://doi.org/10.3233/JAD-170281>
- Amici, F., Sánchez-Amaro, A., Sebastián-Enesco, C., Cacchione, T., Allritz, M., Salazar-Bonet, J., & Rossano, F. (2019). The word order of languages predicts native speakers' working memory. *Scientific Reports* , 9 (1). <https://doi.org/10.1038/s41598-018-37654-9>
- Baddeley, A., Papagno, C., & Andrade, J. (1993). The sandwich effect: The role of attentional factors in serial recall. *Journal of Experimental Psychology: Learning, Memory, and Cognition* , 19 (4), 862–870.
<https://doi.org/10.1037/0278-7393.19.4.862>
- Baum, H. (n.d.). *COMPILED BY* . Retrieved June 25, 2020, from <https://www.uc.edu/content/dam/uc/ce/images/OLLI/Page%20Content>
- Benefits of Muscular Strength & Endurance* . (n.d.). Cdn.Citl.Illinois.Edu. Retrieved June 25, 2020, from https://cdn.citl.illinois.edu/courses/KIN122/week2/chapter5/web_data/

- Bisaz, R., Travaglia, A., & Alberini, C. M. (2014). The Neurobiological Bases of Memory Formation: From Physiological Conditions to Psychopathology. *Psychopathology* , 47 (6), 347–356. <https://doi.org/10.1159/000363702>
- Bonavita, E. (1986). Study of the efficacy and tolerability of L-acetylcarnitine therapy in the senile brain. *International Journal of Clinical Pharmacology, Therapy, and Toxicology* , 24 (9), 511–516. <https://pubmed.ncbi.nlm.nih.gov/3781687/>
- Brady, T. F., Konkle, T., Alvarez, G. A., & Oliva, A. (2008). Visual long-term memory has a massive storage capacity for object details. *Proceedings of the National Academy of Sciences* , 105 (38), 14325–14329. <https://doi.org/10.1073/pnas.0803390105>
- Brown, K. W., Goodman, R. J., Ryan, R. M., & Anālayo, B. (2016). Mindfulness Enhances Episodic Memory Performance: Evidence from a Multimethod Investigation. *PLOS ONE* , 11 (4), e0153309. <https://doi.org/10.1371/journal.pone.0153309>
- Bulkeley, K. (2019). Dreaming is imaginative play in sleep: A theory of the function of dreams. *Dreaming* , 29 (1), 1–21. <https://doi.org/10.1037/drm0000099>
- Center for the Neurobiology of Learning and Memory. (2017). *Highly Superior Autobiographical Memory - Center for the Neurobiology of Learning and Memory* . Center for the Neurobiology of Learning and Memory. <https://cnlm.uci.edu/hsam/>
- Cowan, N. (2008). Chapter 20 What are the differences between long-term, short-term, and working memory? *Progress in Brain Research* , 323–338. [https://doi.org/10.1016/s0079-6123\(07\)00020-9](https://doi.org/10.1016/s0079-6123(07)00020-9)
- Cowan, N. (2013). Working Memory Underpins Cognitive Development, Learning, and Education. *Educational Psychology Review* , 26 (2), 197–223. <https://doi.org/10.1007/s10648-013-9246-y>
- Dame, M. C. W. // U. of N. (2011, November 11). *Walking through doorways causes forgetting, new research shows* . Notre Dame News.

<https://news.nd.edu/news/walking-through-doorways-causes-forgetting-new-research-shows/>

Definition of EMPATHY . (2009). Merriam-Webster.Com.
<https://www.merriam-webster.com/dictionary/empathy>

Diamant, M. (2008, November 21). *Socializing Key to Memory, Fighting Alzheimer's and Dementia - AARP Everywher...* AARP.
<https://www.aarp.org/health/brain-health/info-11-2008/friends-are-good-for-your-brain.html>

Dillon, D. G., & Pizzagalli, D. A. (2018). Mechanisms of Memory Disruption in Depression. *Trends in Neurosciences* , 41 (3), 137–149.
<https://doi.org/10.1016/j.tins.2017.12.006>

Di Pierro, F., Orsi, R., & Settembre, R. (2015). Role of betaine in improving the antidepressant effect of S-adenosyl-methionine in patients with mild-to-moderate depression. *Journal of Multidisciplinary Healthcare* , 8 , 39–45. <https://doi.org/10.2147/JMDH.S77766>

Dzulkifli, M. A., & Mustafar, M. F. (2013). The influence of colour on memory performance: a review. *The Malaysian Journal of Medical Sciences* : MJMS , 20 (2), 3–9.
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3743993/>

Eisenberg, H. (2014, September 15). *Humans Process Visual Data Better* . Thermopylae Sciences + Technology. <http://www.t-sciences.com/news/humans-process-visual-data-better>

Engle, R. (2002). Current Directions in Psychological Science Working Memory Capacity as Executive Attention On behalf of: Association for Psychological Science can be found at: Current Directions in Psychological Science Additional services and information for. *Current Directions in Psychological Science* .
<https://doi.org/10.1111/1467-8721.00160>

Fuller, C., Lehman, E., Hicks, S., & Novick, M. B. (2017). Bedtime Use of Technology and Associated Sleep Problems in Children. *Global Pediatric Health* , 4 , 2333794X1773697.

<https://doi.org/10.1177/2333794x17736972>

- Furmark, T., Tillfors, M., Everz, P.-O., Marteinsdottir, I., Gefvert, O., & Fredrikson, M. (1999). Social phobia in the general population: prevalence and sociodemographic profile. *Social Psychiatry and Psychiatric Epidemiology* , 34 (8), 416–424. <https://doi.org/10.1007/s001270050163>
- George, M. J., Russell, M. A., Piontak, J. R., & Odgers, C. L. (2017). Concurrent and Subsequent Associations Between Daily Digital Technology Use and High-Risk Adolescents' Mental Health Symptoms. *Child Development* , 89 (1), 78–88. <https://doi.org/10.1111/cdev.12819>
- Godman, H. (2018, April 5). *Regular exercise changes the brain to improve memory, thinking skills - Harvard Health Blog* . Harvard Health Blog. <https://www.health.harvard.edu/blog/regular-exercise-changes-brain-improve-memory-thinking-skills-201404097110>
- Gregoire, C. (2013, July 28). *4 Ways To Avoid Becoming A Slave To Technology* . HuffPost. https://www.huffpost.com/entry/why-you-should-do-less-to_n_3635679
- Grilli, M. D., & Glisky, E. L. (2012). Imagining a Better Memory. *Clinical Psychological Science* , 1 (1), 93–99. <https://doi.org/10.1177/2167702612456464>
- Gülpınar, M., & Yeğen, B. C. (2005, January). (PDF) *The Physiology of Learning and Memory: Role of Peptides and Stress* . ResearchGate. https://www.researchgate.net/publication/8147320_The_Physiology_o
- Harvard Health Publishing. (2018a, May 1). *Understanding the stress response - Harvard Health* . Harvard Health; Harvard Health. <https://www.health.harvard.edu/staying-healthy/understanding-the-stress-response>
- Harvard Health Publishing. (2018b, August 13). *Calories burned in 30 minutes for people of three different weights - Harvard Health* . Harvard Health; Harvard Health. <https://www.health.harvard.edu/diet->

[and-weight-loss/calories-burned-in-30-minutes-of-leisure-and-routine-activities](#)

- Henkel, L. A. (2013). Point-and-Shoot Memories. *Psychological Science* , 25 (2), 396–402. <https://doi.org/10.1177/0956797613504438>
- Hölzel, B. K., Carmody, J., Vangel, M., Congleton, C., Yerramsetti, S. M., Gard, T., & Lazar, S. W. (2011). Mindfulness practice leads to increases in regional brain gray matter density. *Psychiatry Research: Neuroimaging* , 191 (1), 36–43. <https://doi.org/10.1016/j.psychresns.2010.08.006>
- Hunt, H., Ruzycki-Hunt, K., Pariak, D., & Belicki, K. (1993). The relationship between dream bizarreness and imagination: Artifact or essence? *Dreaming* , 3 (3), 179–199. <https://doi.org/10.1037/h0094379>
- Jahn, H. (2013). Memory loss in Alzheimer’s disease. *Dialogues in Clinical Neuroscience* , 15 (4), 445–454. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3898682/>
- Kalmijn, S., van Boxtel, M. P. J., Ocke, M., Verschuren, W. M. M., Kromhout, D., & Launer, L. J. (2004). Dietary intake of fatty acids and fish in relation to cognitive performance at middle age. *Neurology* , 62 (2), 275–280. <https://doi.org/10.1212/01.wnl.0000103860.75218.a5>
- Keegan, R. T. (1996). Creativity from childhood to adulthood: A difference of degree and not of kind. *New Directions for Child and Adolescent Development* , 1996 (72), 57–66. <https://doi.org/10.1002/cd.23219967206>
- Keller, K., & Engelhardt, M. (2014). Strength and muscle mass loss with aging process. Age and strength loss. *Muscles, Ligaments and Tendons Journal* , 3 (4), 346–350. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3940510/>
- Kessler Foundation. (2014, December 1). *Impact of traumatic brain injury on longterm memory explored* . ScienceDaily.

<https://www.sciencedaily.com/releases/2014/12/141201191635.htm>

- Kizilbash, A. (2002). The effects of depression and anxiety on memory performance. *Archives of Clinical Neuropsychology* , 17 (1), 57–67. [https://doi.org/10.1016/s0887-6177\(00\)00101-3](https://doi.org/10.1016/s0887-6177(00)00101-3)
- Köbe, T., Witte, A. V., Schnelle, A., Grittner, U., Tesky, V. A., Pantel, J., Schuchardt, J. P., Hahn, A., Bohlken, J., Rujescu, D., & Flöel, A. (2016). Vitamin B-12 concentration, memory performance, and hippocampal structure in patients with mild cognitive impairment. *The American Journal of Clinical Nutrition* , 103 (4), 1045–1054. <https://doi.org/10.3945/ajcn.115.116970>
- Kongkeaw, C., Dilokthornsakul, P., Thanarangsarit, P., Limpeanchob, N., & Norman Scholfield, C. (2014). Meta-analysis of randomized controlled trials on cognitive effects of Bacopa monnieri extract. *Journal of Ethnopharmacology* , 151 (1), 528–535. <https://doi.org/10.1016/j.jep.2013.11.008>
- Krikorian, R., Shidler, M. D., Nash, T. A., Kalt, W., Vinqvist-Tymchuk, M. R., Shukitt-Hale, B., & Joseph, J. A. (2010). Blueberry Supplementation Improves Memory in Older Adults†. *Journal of Agricultural and Food Chemistry* , 58 (7), 3996–4000. <https://doi.org/10.1021/jf9029332>
- LaBerge, S., Baird, B., & Zimbardo, P. G. (2018). Smooth tracking of visual targets distinguishes lucid REM sleep dreaming and waking perception from imagination. *Nature Communications* , 9 (1). <https://doi.org/10.1038/s41467-018-05547-0>
- Lam, A. G. (2015). Effects of Five-Minute Mindfulness Meditation on Mental Health Care Professionals. *Journal of Psychology & Clinical Psychiatry* , 2 (3). <https://doi.org/10.15406/jpcpy.2015.02.00076>
- Lardone, A., Liparoti, M., Sorrentino, P., Rucco, R., Jacini, F., Polverino, A., Minino, R., Pesoli, M., Baselice, F., Sorriso, A., Ferraioli, G., Sorrentino, G., & Mandolesi, L. (2018). Mindfulness Meditation Is Related to Long-Lasting Changes in Hippocampal Functional

Topology during Resting State: A Magnetoencephalography Study. *Neural Plasticity* , 2018 , 1–9. <https://doi.org/10.1155/2018/5340717>

Latham, N., & Liu, C. (2010). Strength Training in Older Adults: The Benefits for Osteoarthritis. *Clinics in Geriatric Medicine* , 26 (3), 445–459. <https://doi.org/10.1016/j.cger.2010.03.006>

Lawrence, Z., & Peterson, D. (2014). Mentally walking through doorways causes forgetting: The location updating effect and imagination. *Memory* , 24 (1), 12–20. <https://doi.org/10.1080/09658211.2014.980429>

Lehrer, J. (2012, March 12). How To Be Creative. *Wall Street Journal* . <https://www.wsj.com/articles/SB100014240529702033706045772656>

Lieberman, H. R., Wurtman, R. J., Emde, G. G., Roberts, C., & Coviella, I. L. G. (1987). The effects of low doses of caffeine on human performance and mood. *Psychopharmacology* , 92 (3), 308–312. <https://doi.org/10.1007/bf00210835>

Lim, H. A., & Park, H. (2018). The effect of music on arousal, enjoyment, and cognitive performance. *Psychology of Music* , 030573561876670. <https://doi.org/10.1177/0305735618766707>

Lindstrom, H. A., Fritsch, T., Petot, G., Smyth, K. A., Chen, C. H., Debanne, S. M., Lerner, A. J., & Friedland, R. P. (2005). The relationships between television viewing in midlife and the development of Alzheimer's disease in a case-control study. *Brain and Cognition* , 58 (2), 157–165. <https://doi.org/10.1016/j.bandc.2004.09.020>

Liu, F., Sulpizio, S., Kornpetpanee, S., & Job, R. (2017). It takes biking to learn: Physical activity improves learning a second language. *PLOS ONE* , 12 (5), e0177624. <https://doi.org/10.1371/journal.pone.0177624>

Long, L. L., & Srinivasan, M. (2013). Walking, running, and resting under time, distance, and average speed constraints: optimality of walk–run–rest mixtures. *Journal of The Royal Society Interface* , 10 (81), 20120980. <https://doi.org/10.1098/rsif.2012.0980>

- Ludyga, S., Gerber, M., Brand, S., Pühse, U., & Colledge, F. (2018). Effects of Aerobic Exercise on Cognitive Performance Among Young Adults in a Higher Education Setting. *Research Quarterly for Exercise and Sport* , 89 (2), 164–172. <https://doi.org/10.1080/02701367.2018.1438575>
- Lukasik, K. M., Waris, O., Soveri, A., Lehtonen, M., & Laine, M. (2019). The Relationship of Anxiety and Stress With Working Memory Performance in a Large Non-depressed Sample. *Frontiers in Psychology* , 10 . <https://doi.org/10.3389/fpsyg.2019.00004>
- Lu, Z.-L. (2012). Sensory Memory. *Encyclopedia of the Sciences of Learning* , 3042–3044. https://doi.org/10.1007/978-1-4419-1428-6_257
- MacKenzie, G., Powell, T. F., & Donaldson, D. I. (2014). Positive emotion can protect against source memory impairment. *Cognition and Emotion* , 29 (2), 236–250. <https://doi.org/10.1080/02699931.2014.911145>
- Martins, J. G. (2009). EPA but Not DHA Appears To Be Responsible for the Efficacy of Omega-3 Long Chain Polyunsaturated Fatty Acid Supplementation in Depression: Evidence from a Meta-Analysis of Randomized Controlled Trials. *Journal of the American College of Nutrition* , 28 (5), 525–542. <https://doi.org/10.1080/07315724.2009.10719785>
- Mattson, M. (2014, August 22). *This is your brain detecting patterns: It is different from other kinds of learning, study shows* . ScienceDaily. <https://www.sciencedaily.com/releases/2018/05/180531114642.htm>
- Max-Planck-Gesellschaft. (2013, August 27). *Long-term memory stored in the cortex* . ScienceDaily. <https://www.sciencedaily.com/releases/2013/08/130827091629.htm>
- McLeod, S. (2019). *Atkinson and Shiffrin | Multi Store Model of Memory | Simply Psychology* . Simplypsychology.Org. <https://www.simplypsychology.org/multi-store.html>
- McRae, K., & Jones, M. (2012, January). (PDF) *Semantic memory* .

ResearchGate.

https://www.researchgate.net/publication/228835968_Semantic_memory

Mecklenbräuker, S., & Hager, W. (1984). Effects of mood on memory: Experimental tests of a mood-state-dependent retrieval hypothesis and of a mood-congruity hypothesis. *Psychological Research* , 46 (4), 355–376. <https://doi.org/10.1007/bf00309069>

Messier, S. P., Mihalko, S. L., Beavers, D. P., Nicklas, B. J., DeVita, P., Carr, J. J., Hunter, D. J., Williamson, J. D., Bennell, K. L., Guermazi, A., Lyles, M., & Loeser, R. F. (2013). Strength Training for Arthritis Trial (START): design and rationale. *BMC Musculoskeletal Disorders* , 14 (1). <https://doi.org/10.1186/1471-2474-14-208>

Mindvalley. (2017). There Is No Such Thing As A Good Or Bad Memory | Jim Kwik [YouTube Video]. In *YouTube* .
<https://www.youtube.com/watch?v=L0RQgJCbECA>

Mnemonic major system . (2020, June 18). Wikipedia.
https://en.wikipedia.org/wiki/Mnemonic_major_system

Morton, A. (2013). *Emotion and imagination* . Polity.

Noguchi-Shinohara, M., Yuki, S., Dohmoto, C., Ikeda, Y., Samuraki, M., Iwasa, K., Yokogawa, M., Asai, K., Komai, K., Nakamura, H., & Yamada, M. (2014). Consumption of Green Tea, but Not Black Tea or Coffee, Is Associated with Reduced Risk of Cognitive Decline. *PLoS ONE* , 9 (5), e96013. <https://doi.org/10.1371/journal.pone.0096013>

Ohio State University. (2019, September 3). *Share your goals -- but be careful whom you tell: Tell your aspirations to higher-status people, study suggests* . ScienceDaily.
<https://www.sciencedaily.com/releases/2019/09/190903084051.htm>

Parker, E. S., Cahill, L., & McGaugh, J. L. (2006). A Case of Unusual Autobiographical Remembering. *Neurocase* , 12 (1), 35–49.
<https://doi.org/10.1080/13554790500473680>

Perfect, T. J., Wagstaff, G. F., Moore, D., Andrews, B., Cleveland, V., Newcombe, S., Brisbane, K.-A., & Brown, L. (2008). How can we

help witnesses to remember more? It's an (eyes) open and shut case. *Law and Human Behavior* , 32 (4), 314–324. <https://doi.org/10.1007/s10979-007-9109-5>

Pettijohn, K. A., & Radvansky, G. A. (2018). Walking through doorways causes forgetting: active and passive interaction. *Journal of Cognitive Psychology* , 30 (8), 771–777. <https://doi.org/10.1080/20445911.2018.1540492>

Poerio, G. L., Totterdell, P., Emerson, L.-M., & Miles, E. (2015). Love is the triumph of the imagination: Daydreams about significant others are associated with increased happiness, love and connection. *Consciousness and Cognition* , 33 , 135–144. <https://doi.org/10.1016/j.concog.2014.12.011>

Qureshi, A., Rizvi, F., Syed, A., Shahid, A., & Manzoor, H. (2014). The method of loci as a mnemonic device to facilitate learning in endocrinology leads to improvement in student performance as measured by assessments. *Advances in Physiology Education* , 38 (2), 140–144. <https://doi.org/10.1152/advan.00092.2013>

Rabinowitz, A., & Heinhorn, L. (1985). Empathy and Imagination. *Imagination, Cognition and Personality* , 4 (3), 305–312. <https://doi.org/10.2190/43dx-ukuf-nvp5-altp>

Rae, C., Digney, A. L., McEwan, S. R., & Bates, T. C. (2003). Oral creatine monohydrate supplementation improves brain performance: a double-blind, placebo-controlled, cross-over trial. *Proceedings of the Royal Society of London. Series B: Biological Sciences* , 270 (1529), 2147–2150. <https://doi.org/10.1098/rspb.2003.2492>

Rasch, B., & Born, J. (2013). About Sleep's Role in Memory. *Physiological Reviews* , 93 (2), 681–766. <https://doi.org/10.1152/physrev.00032.2012>

Robinson, K., & Aronica, L. (2010). *The Element t : how finding your passion changes everything* . Penguin.

Rolls, E. T., Dempere-Marco, L., & Deco, G. (2013). Holding Multiple Items

in Short Term Memory: A Neural Mechanism. *PLoS ONE* , 8 (4), e61078. <https://doi.org/10.1371/journal.pone.0061078>

Ruhr-Universitaet-Bochum. (2017, December 22). *How odors are turned into long-term memories* . ScienceDaily. <https://www.sciencedaily.com/releases/2017/12/171222092552.htm>

Runco, M. A., & Pina, J. (2013). Imagination and Personal Creativity. In *Oxford Handbooks Online* . Oxford University Press. <https://doi.org/10.1093/oxfordhb/9780195395761.013.0024>

Russ, S., & Wallace, C. (2013). Pretend Play and Creative Processes. *American Journal of Play* , 6 (1), 136.

Schacter, D. L. (2007). *How the mind forgets and remembers : the seven sins of memory* . Souvenir.

Shultz, S., Opie, C., & Atkinson, Q. D. (2011). Stepwise evolution of stable sociality in primates. *Nature* , 479 (7372), 219–222. <https://doi.org/10.1038/nature10601>

Soares, J. S., & Storm, B. C. (2018). Forget in a Flash: A Further Investigation of the Photo-Taking-Impairment Effect. *Journal of Applied Research in Memory and Cognition* , 7 (1), 154–160. <https://doi.org/10.1016/j.jarmac.2017.10.004>

Sparrow, B., Liu, J., & Wegner, D. M. (2011). Google Effects on Memory: Cognitive Consequences of Having Information at Our Fingertips. *Science* , 333 (6043), 776–778. <https://doi.org/10.1126/science.1207745>

Stein, T., Kaiser, D., & Hesselmann, G. (2016). Can working memory be non-conscious? *Neuroscience of Consciousness* , 2016 (1), niv011. <https://doi.org/10.1093/nc/niv011>

Stepan, M. E., Fenn, K. M., & Altmann, E. M. (2019). Effects of sleep deprivation on procedural errors. *Journal of Experimental Psychology: General* , 148 (10), 1828–1833. <https://doi.org/10.1037/xge0000495>

- Stephen Daniells. (2012, August 30). *Green tea may influence brain function & boost working memory: Study* . Nutraingredients-Usa.Com. <https://www.nutraingredients-usa.com/Article/2012/08/31/Green-tea-may-influence-brain-function-boost-working-memory-Study>
- Stoewen, D. L. (2017). Dimensions of wellness: Change your habits, change your life. *The Canadian Veterinary Journal = La Revue Veterinaire Canadienne* , 58 (8), 861–862. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5508938/>
- Talamini, F., Altoè, G., Carretti, B., & Grassi, M. (2017). Musicians have better memory than nonmusicians: A meta-analysis. *PLOS ONE* , 12 (10), e0186773. <https://doi.org/10.1371/journal.pone.0186773>
- Thomas, N. J. T. (1999). *Imagination* . Philarchive.Org. <https://philarchive.org/rec/THOI>
- Todorova, R., & Zugaro, M. (2019). Isolated cortical computations during delta waves support memory consolidation. *Science* , 366 (6463), 377–381. <https://doi.org/10.1126/science.aay0616>
- Trafton, A. (2017, April 6). *Neuroscientists identify brain circuit necessary for memory formation* . MIT News. <http://news.mit.edu/2017/neuroscientists-identify-brain-circuit-necessary-memory-formation-0406#:~:text=A%20new%20MIT%20study%20of>
- Tucker, W. J., Angadi, S. S., & Gaesser, G. A. (2016). Excess Postexercise Oxygen Consumption After High-Intensity and Sprint Interval Exercise, and Continuous Steady-State Exercise. *The Journal of Strength & Conditioning Research* , 30 (11), 3090–3097. <https://doi.org/10.1519/JSC.0000000000001399>
- Tyng, C. M., Amin, H. U., Saad, M. N. M., & Malik, A. S. (2017). The Influences of Emotion on Learning and Memory. *Frontiers in Psychology* , 8 . <https://doi.org/10.3389/fpsyg.2017.01454>
- University of Edinburgh. (2016, March 31). Brain study reveals how long-term memories are erased. *ScienceDaily* . Retrieved June 14, 2020

from www.sciencedaily.com/releases/2016/03/160331124719.h

- Verrusio, W., Ettorre, E., Vicenzini, E., Vanacore, N., Cacciafesta, M., & Mecarelli, O. (2015). The Mozart Effect: A quantitative EEG study. *Consciousness and Cognition* , 35 , 150–155. <https://doi.org/10.1016/j.concog.2015.05.005>
- Vredeveltdt, A., Baddeley, A. D., & Hitch, G. J. (2013). The effectiveness of eye-closure in repeated interviews. *Legal and Criminological Psychology* , 19 (2), 282–295. <https://doi.org/10.1111/lcrp.12013>
- Vyazovski, V. (2015). Sleep, recovery, and metaregulation: explaining the benefits of sleep. *Nature and Science of Sleep* , 171. <https://doi.org/10.2147/nss.s54036>
- Wegner, D. M. (1987). Transactive Memory: A Contemporary Analysis of the Group Mind. *Theories of Group Behavior* , 185–208. https://doi.org/10.1007/978-1-4612-4634-3_9
- Weinberg, L., Hasni, A., Shinohara, M., & Duarte, A. (2014). A single bout of resistance exercise can enhance episodic memory performance. *Acta Psychologica* , 153 , 13–19. <https://doi.org/10.1016/j.actpsy.2014.06.011>
- Wiswell, J. (2016, January 11). What is the link between memory and imagination? World Economic Forum. <https://www.weforum.org/agenda/2016/01/what-is-the-link-between-memory-and-imagination/>
- Worley, S. L. (2018). The Extraordinary Importance of Sleep: The Detrimental Effects of Inadequate Sleep on Health and Public Safety Drive an Explosion of Sleep Research. *P & T : A Peer-Reviewed Journal for Formulary Management* , 43 (12), 758–763. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6281147/>
- Zaki, J., & Ochsner, K. N. (2012). The neuroscience of empathy: progress, pitfalls and promise. *Nature Neuroscience* , 15 (5), 675–680. <https://doi.org/10.1038/nn.3085>
- Zichlin, M. (2011). Procedural Memory. *Encyclopedia of Clinical*

Neuropsychology , 2033–2034. https://doi.org/10.1007/978-0-387-79948-3_1143